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TYPHOID FEVER

AND ITS

ABORTIVE TREATMENT

BY

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"Thus, for me, as in the case of great physicians, the measure of real progress in medicine must not, and should not, be estimated in any other way than the greater or lesser number of patients which the physician can conscientiously say he has seized out of the jaws of death."

* * * * * * * * * *

"No matter in what position in life a man may be, his greatest object should be to preserve health and life."

—Semmola.

CORRIGENDA.

Page 20. Third line from foot of page—insert *or* before *typho-malarial.*

Page 85. Twelfth line of first paragraph—for *respectful* read *respectable.*

Page 98. Fourth line of fourth paragraph—for *but* read *and.*

Page 102. Eighth line from top—in place of *they* read *the symptoms.*

Page 101. Fourth line of second paragraph—for *insufficient* read *inefficient.*

Page 114 Fifth line from foot of page—omit *which.*

PREFACE.

The objects that are sought to be accomplished by the issuance of this book are: First, to present to the members of the medical profession so much evidence of the truth of the "startling declaration that typhoid fever can be aborted" as will induce a large number of physicians to give antiseptic medicine a fair and faithful trial in this disease—the most destructive to adolescent life of all of the acute specific infections—a disease which is both preventable and curable, but which is not only *not* excluded from, but has been practically invited to invade every community, and has hitherto been allowed to pursue its course uninterrupted by any scientific or efficacious treatment; second, to give such explicit directions as will enable all physicians to so intelligently apply the principles of antiseptic medicine to the cure of typhoid fever that they may secure for their patients the least inconvenience and suffering, the shortest duration of illness, and the lowest possible death rate; third, and finally, to impress upon the minds of the members of this medical profession the enormity of the crime which is committed by all communities that pour their excrement laden sewage into our fresh water lakes and rivers, in violation of all sanitary principles, of genuine humaneness and even of common decency; to the subversion of all efforts at the prophylaxis of typhoid fever, cholera, and other diseases.

The book is written in defiance of the opinions of the bacteriologist, who has demonstrated the impossi-

bility of destroying the bacillus typhosis in living man; of the pathologist, who has shown that the microörganism finds its way deep into all of the organs of the body, and hence cannot be dislodged; of the therapeutist, who has asserted that drugs can accomplish no useful purpose in the treatment of typhoid fever; and of the theorist, who has exposed the ignorance of those who believe in the curability of the disease.

The bootless task of endeavoring to demonstrate the manner in which these antiseptic medicines produce their effects, or the settling of other moot questions, has not been essayed; but these pages will show that for more than fourteen years I have had no death from typhoid fever in a locality in which my death rate had previously been very high—that in no instance in which a case of typhoid fever has come under my care prior to the eighth day of illness have I failed to abort the disease in ten or twelve days or less—that in no instance in which I have been called so early that a reasonably positive diagnosis could not be made on the first or second visit, have I had a well-developed case of typhoid fever, although many such cases have presented pathognomonic symptoms of the disease, and they will also show that so large a number other physicians have demonstrated the power of abortifacients over typhoid fever, that, as an ex-President of the Ohio State Medical Society said in a public address (see page 161) "it (the treatment) has stood the crucial test for years in hundreds of cases and the theory is fully sustained by the long list of victories achieved."

It is to be hoped, therefore, that the importance of the subject to both physicians and their patients, will justify the haste which sent the book from the printer to the

electrotyper without waiting to have the page proofs returned to me for correction, and that this entrusting of the final proof reading to the printers will serve as an excuse for any consequent grammatical or typographical defects which may mar its pages.

637 Prospect Street, Cleveland, Ohio.
March 10, 1896.

INTRODUCTION.

It has been my intention to publish this book ever since 1893, when I first began to keep accurate records of all cases presenting pathognomonic symptoms of typhoid fever, that I might be able to show a few specimens of the evidence of the effectiveness of alexipharmic medicine which had convinced others and satisfied myself that I had made a discovery—that typhoid fever can be aborted and need not necessarily run its usual course—and the treatment capable of accomplishing this result, which if it were promptly accepted by the entire body of the medical profession, and its principles intelligently applied to the cure of microbic diseases would greatly abbreviate the duration of the illness, signally ameliorate the pathema, and save the life of every victim of typhoid fever, as well as minimize the danger from many other diseases.

It would have been written long ago had not my announcement that typhoid fever could be aborted been met by such an unanimous expression of disagreement, and such impassioned denunciations, as to admonish me to beware of the storm clouds gathering above the horizon, for every day a new cautionary signal was hoisted, and forewarned and thus forearmed I realized that the medical profession was not yet ready to accept a theory which was not only guilty of the offense of being new and in conflict with the most advanced ideas of pathology,

but which greatly multiplied the responsibilities of those who treat any of the microbic diseases.

This reason no longer holds good, because so large a number of the most conservative physicians of so many different localities have succeeded in aborting so great a number of cases of typhoid fever that my theory has become a principle established by the evidence of many observers and that principle at first so universally ridiculed and condemned, now governs the practice of a large and rapidly increasing number of the most intelligent and progressive members of the profession and the results which were formerly with unison and no hesitation pronounced impossible, are now obtained in triumph.

That which has induced me to take up my pen at the present time is the knowledge that I have hitherto been able only to give directions for the management of the antiseptic treatment of the disease in so brief and abridged a manner in my papers (which were written in as concise a way as possible that they might be finished in the twenty minutes to which each address is limited) that many of those physicians, who honestly and truly desired to adopt this method of antisepsis, were being misled or perverted by my necessarily incomplete and hence imperfect and deficient teaching. I found that others were wisely awaiting more explicit details before attempting to apply so novel a method of controlling a pathological condition which had heretofore been regarded as immedicable. Thus many thousands of lives were being sacrificed annually to a disease which should never cause a death.

The incompleteness of my work will, perhaps, be excused when it is remembered that its paragraphs

have been written in the leisure time between professional engagements, that its preparation has been constantly interrupted, and moreover that it has been hurried into press, to meet the urgent demand for copies, a large number of which were ordered before it was even commenced, and that in my haste I may have allowed some grave errors to creep into its lines.

So many wild and unfounded rumors have been circulated concerning my theories on the subject of intestinal and general antisepsis, as to require that in justice to myself I ought to define my position in unmistakable language, that may forestall the future tirades and sibilations of those who would castigate and anathematize, but more especially that my paraphrasts and commentators may not misunderstand or misjudge me, and that my oneirocritics may interpret my dreams of that time to come when each human being shall have become the beneficiary of the publishing of this little book, with such acumen and discernment that both physician and invalid will be assured of the truthful maxims it bears on the white pages between its pasteboard covers.

As I have studied to be brief, no single subject in this book has been discussed in all completeness, only the more important aspects have been touched upon extensively, and I have left much unwritten which should have been presented.

Since many of these pages have been written for presentation to widely separated audiences some repetition has been necessary and is excusable.

My statements have been so often misrepresented and my position misconstrued, that I may be excused for defining my position and claims.

I believe that in every uncomplicated case of typhoid fever the disease can be aborted, if proper antiseptic treatment be instituted at a sufficiently early stage of the malady.

I have never taught that the disease can *always* be aborted when the treatment has been too long deferred, but I have taught that uncomplicated typhoid fever should never cause a death—an obvious deduction from the first declaration.

I have never, even by implication, given any one the right to assert that I do not recognize the possibility of death from intercurrent disease during an attack of typhoid fever, even though it may have been properly treated from its inception.

While I have thus far been able to abort the disease in every instance in which treatment was instituted on or before the eighth day, and in a large percentage of those cases in which it was commenced on or before the tenth day of sickness, as well as in a few cases taken at a much later period, I have never taught that the disease can always be aborted when treatment has been so long postponed.

My first modest announcement of some of the advantages of the antiseptic treatment of typhoid fever made in my local society in 1880, was received with such outspoken skepticism and disapproval as to arouse all of the latent irascibility in my nature, and if I have occasionally alluded to the members of the profession, who have been accorded every opportunity to see my work and who for reasons more or less discreditable refused to accept the evidence which they dared not deny, my excuse is that the provocation was prodigious.

I have condemned in unstinted and unmeasured terms

those barricades and stumbling blocks that have cast themselves and all of their impediments in the pathway of progress. I have maintained that willful ignorance is culpable ignorance; that culpable ignorance where human life is at stake is a crime, and that he who has an opportunity of knowing that the life of every victim of typhoid fever can be saved and rejects irrefutable evidence of the fact, is guilty of willful ignorance.

I have denounced with the utmost frankness the errors of diagnosis and treatment so commonly and habitually made all over the world, wherever this disastrous malady is prevalent.

In 1882 I declared that intestinal hæmorrhage would never occur in any case of typhoid fever which had been properly treated from the outset of the disease, but I have never claimed any special skill in the treatment of that accident after its supervention as has been unequivocally asserted in at least one medical journal by one of its associate editors. I shall not waste time in answering every diatribist or medical editor who sees something to attack or anathematize in everything that does not lie within his intellectual horizon.

It has been intimated that I have tacitly consented to the publication in the secular press of some of my articles on typhoid fever. I wish to enter a simple denial to this most annoying slander. I have never in all of my professional career consented to, or connived at the publication in any other than a medical journal of any paper or extract from any paper on this or any other medical subject.

All other diatribes and scandals may be left to the arbitrament of time.

The following papers are reproduced here because

after both the reprints and the editions of the Journal of the American Medical Association containing them were exhausted and out of print, many requests for copies which could not be supplied were received and because, having been read before and discussed by various medical societies, it is hoped that they may have some weight in inducing members of the profession to adopt a principle of treatment in microbic diseases which must contribute to the longevity of the human race and the advancement of the dearest interests and the honor of the medical profession.

My first consideration has been to give such clear and explicit details of treatment as would enable every intelligent physician to so apply the principles of the abortive treatment of typhoid fever that few lives need be sacrificed to this malady.

TYPHOID FEVER.

DEFINITIONS.

The late Dr. Murchison in his classic work, "Continued Fevers," under the caption "Enteric or Pythogenic Fever," defines "typhoid fever" as, "An endemic disease, generated and propagated by certain forms of decomposing matter. Its symptoms are: A commencement often insidious or marked by slight rigors, a sensation of chilliness; a profuse diarrhœa; pulse usually frequent and soft, but pulse and temperature both subject to great variations in the same patient; febril symptoms in mild cases often remittent; tongue red and often fissured, occasionally becoming dry and brownish; in most cases but not invariably increased splenic dullness; tympanitis; abdominal tenderness; gurgling in the iliac fossæ and diarrhœa with or without intestinal hæmorrhage; skin warm with occasional sweats. An eruption of isolated elevated rose colore spots, vanishing on pressure, first appearing between the seventh and fourteenth days and coming out in successive crops each of which lasts two or three or more days; frequently epistaxis; prostration coming on late, patient rarely taking to bed before the seventh day; headache sometimes followed by stupor and active delirium, but mind often clear throughout the attack even in fatal cases; dilated pupils; the disease protracted to the twentieth or thirtieth day and occasionally though rarely

followed by a relapse of all the symptoms including the eruption. After death, disease of the solitary and agminated glands of the ileum and enlargement of the spleen and mesenteric glands."

Hutchinson defines typhoid fever as "An endemic, infectious fever, usually lasting between three and four weeks, and associated with constant lesions of the solitary and agminated glands of the ileum and with enlargement of the spleen and mesenteric glands. Its invasion is gradual and often insidious. Sometimes the only symptoms present in the beginning are a feeling of lassitude; some gastric derangement and a slight elevation of temperature; at others there are slight rigors or chilly sensations, headache, epistaxis, diarrhœa, and pain in the abdomen. The principal symptoms of the fully formed disease are a febril movement possessing certain characteristics, headache, passing into delirium and stupor, diarrhœa associated with ochre-yellow stools, tympanites, pain and gurgling in the right iliac fossa, a red and furred tongue, which later becomes dry, brown and fissured; a frequent pulse; an eruption of rose colored spots, occurring about the seventh or eighth day, slightly elevated above the surface, disappearing under pressure, and coming out in successive crops, each spot lasting about three days; prostration not marked in the beginning, but rapidly increasing; and occasionally deafness, sweats and intestinal hæmorrhages. When recovery takes place, the convalescence is usually tedious, and may sometimes be protracted by the occurrence of one or more relapses."

Harley as "A continued febrile condition of uncertain duration, accompanied by marked intestinal derangement, and invariably associated with lesion of the solitary and

agminated glands of the intestines. It commences in anorexia, with nausea and vomiting; its progress is marked by profuse diarrhœa of light ochre colored watery stools, associated with abdominal pains, tenderness and tympanitic swelling; and if the issue be unfavorable, it terminates in exhaustion, intestinal hæmorrhage, or perforation of the bowel. Death usually occurs in the fourth week. In the early period the disease is attended by more or less pyrexia; as soon as it is fully developed, there is well-marked hectic fever.

"During the height of the disease a scattered papular rash appears in successive crops on the abdomen and chest. The rapidity with which the symptoms are manifested, the degree to which they are developed, vary greatly in different cases. The intestinal disease is frequently obscured by the concurrence of pulmonary or cerebral complications."

Von Gietl—"As a specific, putrid, intoxication disease (Intoxications-krankheit) which is composed of a chain of diseased processes, which are dependent upon one another, but which do not retain a regularity either in number or in succession. Its local effect is a catarrh of the alimentary canal; the further and peculiar result a swelling of the glandular apparatus as well of the mesentary as the mucous membrane of the intestines.

"Exfoliation and ulceration generally follow, the final effects being mortification in all degrees. The lower grades of typhoid infection agree perfectly in their manifestations with the simple form of putrid infection."

These descriptions should be amended, but it would be difficult—perhaps impossible—to give an exact definition of typhoid fever which would not in the near future require emendation; for the signs of the times indicate

that we are on the eve of wonderful discoveries in bacteriology which will upset many existing notions on the nature and cure of disease; but since all of these descriptions of the disease are in a greater or lesser degree misleading, some slight improvement on them must be attempted.

Typhoid fever may be loosely described as an acute, endemic, infectious fever—which consists of a series of pathological changes and anatomical lesions, directly or indirectly due to the presence in the system of a specific microbic poison.

These lesions and pathological conditions consist of certain changes in the organism, which are dependent on the invasion of the various organs of the body by the bacteria and the absorption into the circulation of its ptomaines. The disease is further characterized by many grave and ofttimes fatal complications and sequelæ. Tumefaction, of an inflammatory nature, of the glands of the lower portion of the ileum, the solitary and agminated glands of Peyer, or of the glands of the cæcum or of the colon are constant lesions of the disease and unless they regain, as they may, their normal state by resolution, necrosis and ulceration follow and from these ulcerations intestinal hæmorrhage or perforation and peritonitis may result.

The salient pathematic fact around which all minor considerations may be grouped is, that the primary lesions of the disease are always due to one and the same pathogenic influence, probably the bacillus typhosis and its toxins, that all of its multifarious complications and sequelæ are deuteropathic consequences of the invasion of the system by this poison, that some secondary effects are caused by other noxæ which have

gained ingress to an organism already weakened by the idiopathic disease, or perhaps it were better to say, caused in some instances, at least, by the virulization of other noxa, already domiciled in the system. Accepting this as a true definition of typhoid fever, the obvious deductions are that stowed away somewhere in the recesses of nature is some agent that will neutralize or destroy the noxa of typhoid fever, and the logical conclusion is that if it can be destroyed in one receptacle it can be destroyed in all like receptacles, and as typhoid fever has been aborted it can always be aborted.

When the medical profession realizes that all this is possible a new impetus will have been given to the study of parasitology and to the relation of this department of science to the cure of disease

NOMENCLATURE.

1. Synonyms Derived from its Supposed Resemblance to Typhus.—Typhus Nervosus, Sauvages, 1760; Typhus Mitior and Synochus pro parte, Cullen, 1769; Abdominal Typhus and Darm-Typhus, Autenrieth, 1822, and German writers generally; Synochus and Typhus with Abdominal Affection, Southwood Smith, 1830; Fièvre Typhoide, Louis, 1829; Chomel, 1834; Typhus gangliaris vel entericus, Ebel, 1836; Schönlein, 1839; Typhoid Fever, Stewart, 1840; Bartlett, 1842; Jenner, 1849; Mild Typhoid Fever, Copland, 1844; Ilio-typhus Griesinger, 1857; Typhia, Farr, 1859; Typhus, many writers.

2. From its Mode of Prevalence.—Febris non-pestilens, Forestus, 1591; Endemic Fever, many writers; Autumnal or Fall Fever, Flint, 1852; and American writers generally.

3. From its Remittent Character. — *Πυρετὸς ἡμιτριταῖος* (?) Hippoc.; Hemitritæus (?) Tritæophyas (?) and Triphodes (?) auctor. antiq. var.; Febris semitertiana seu composita, Galen (?) Forestus, 1591; Spigelius, 1624; Tritæophya typhodes Mangetus, 1695; Remittent Fever T. Sutton, 1806; Infantile Remittent Fever, Evanson and Maunsell, 1836; and many writers.

4. From its Lengthened Duration.—Febris lenta Forestus, 1591; Willis, 1659; Linnaeus, 1763; Vogel, 1764; Slow or Lent Fever, Strother, 1729; Langrish, 1735; Febris chronica, (?) Juncker, 1736; Common Continued Fever, Armstrong, 1816; Fièvre continue Lerminier and Andral, 1823.

5. From its Supposed Nervous or Hysteric Character.—Nervous Fever, Gilchrist, 1734; Slow Nervous Fever, Huxham, 1739; Febricula, or Little Fever, commonly called the Nervous or Hysteric Fever, Fever on the Spirits, Vapours, etc., Manningham, 1746; Irregular Low Nervous Fever, Fordyce, 1791; Nervenfieber, German writers; Fièvre nerveuse, French writers; Low Fever, many writers.

6. From the Occurrence of Putrid or Septic Symptoms. — Febris Putrida, Riverius, 1623; Febris putrida quae vulgo lenta appellatur, Willis, 1659; Febris putrida nervosa, (?) Wintringham, 1752; Febris putrida aut biliosa, Tissot, 1758 ; Febris a putredine orta, A. Tralliani, quoted by Burserius as syn. for his Fe. gastric ac., 1785 ; Febris atacta, proparte, Selle, 1770; Fievre ataxique, pro parte, F. adéna-méningée, Pinel, 1798; Entérite septicémique, Piorry, 1841 ; Sepimia, Hare, 1853.

7. From its Resemblance to Hectic Fever.—

Febris hectica, Willis, 1667; Infantile hectic fever, various writers.

8. From the Absence of True Typhus-Eruption. —Febris petechizans vel spuria, Hoffmann, 1699.

9. From the Common Occurrence of Gastric Derangement, Bilious Vomiting, etc.—Febris gastrica, Ballonius, 1640; Febris acuta stomachica aut intestinalis, Heister, 1736; Febris glutinosa gastrica, Sarcone, 1765; Febris gastrica acuta, Burserius, 1785; Fièvre méningo-gastrique, Pinel, 1798; Gastrisches Fieber, Richter, 1813; Fièvre gastrique, Dict. des Sc. méd., 1816; Epidemic Gastric Fever, Cheyne, 1833; Gastric Fever, Craigie, 1837; Febris biliosa, Galen (?) River., 1623; Stahl, 1700; Juncker, 1736; Bilious Fever, Pringle, 1750; Rutty, 1770; Febris biliosa putrida, Selle, 1770; Febbre biliosa, Benelli, 1775; Synochus biliosus, Sauvages, 1760; Bilio-gastric Fever, Copland, 1844; Gastro-bilious and Bilious Continued Fever, modern writers.

10. From the Intestinal Symptoms and Lesions.* —Febris colliquativa, (?) J. R. Fortis, 1668, Febris stercoralis, (?) Quesnay, 1753; Febris mucosa, Selle, 1770; Febris pituitosa, Stoll, 1785; Strack, 1789; Febris colliquativa primaria sue essentialis, Burserius, 1785; Morbus biliosis-mucosus, Knaus, 1786; Febris pituitosa nervosa, Jacobi, 1793; Schleimfieber, Kanz, 1795; Fièvre muqueuse, French writers; Mucous or Pituitous Fever, Copland, 1844; Febris mesenterica maligna, Baglivi, 1696; Hoffmann, 1699; Febris intestinalis vel mesenterica, Riedel, 1748; Febris mésenterica acuta, Burchard, quoted by Burserius, 1785; Fièvre

* Many of the cases described by Cullen and his successor, as "Enteritis Erysipelatosa," were probably examples of this fever. (See description of it by Alison, 1844, No. 2, p. 323.)

entéro-mésentérique, Petit and Serres, 1813; Enteritic Fever, Mills, 1813; Gastro-entérite, Broussais, 1816; Entero-mesenteric Fever, Abercrombie, 1820; Febris mesaraica; Wendt, 1822; Dothiénentérito, Bretonneau, 1826; Leuret, 1828; Christison, 1840; Mucoenteritis, various writers; Fever, with Affection of the Abdomen, Alison, 1827; Fever with Ulceration of the Intestines, Bright, 1829; Gastro-enteric and Gastro-splenic Fever; Craigie, 1837; Entérite-folliculeuse, Cruveilhier, 1835; Forget, 1841; Enteric Fever, Ritchie, 1846; Wood, 1848; W. T. Gairdner, 1859; Coll. Phys., London, 1869; Febris tympanica, Babbington, 1853; Intestinal Fever, W. Budd, 1856.

11. From its Supposed Dependence on Worms.—Typhus hysterico-verminosus, Sauvages, 1760; Febris verminosa, Selle, 1770; Worm Fever pro parte, various writers.

12. From its Mode of Origin.—Night Soil Fever, Brown, 1855; Pythogenic Fever, Murchison, 1858; Cesspool Fever, various writers.

13. Other Designation.—Miliary Fever, Pringle and De Haen, 1760.*

This list of the synonyms of typhoid fever are copied from Murchison's great and classic work, "On the Continued Fevers of Great Britain," from which I shall have occasion to make many extracts, since all authorities agree that the late Charles Murchison, M. D., LL.D.,

* Murchison says, "Some of the descriptions of the Greek writers probably referred to enteric fever. Hippocrates states that in the course of two successive autumns, he met with many cases of fever of the continual type, characterized by diarrhœa, offensive watery stools, bilious vomiting, tympanitis, abdominal pain, 'red rashes,' epistaxis, sleeplessness, or a tendency to coma, delirium, subsultus, irregular remissions, a lengthened duration and great emaciation." (De Epid. lib. i. Syd. Soc. Transl. i. 354-9 and 420).

F. R. S., should be accredited with having produced the best and most accurate treatise that has ever been written on these subjects.

The synonyms are given, not because many of them are valuable to-day as designations for this disease, but because, dating as some of them do from a period almost five hundred years before Christ and some of them possibly even antedating that far off time, they in themselves give a cursory history of the disease.

That this description written in the years intervening between the eighty-sixth and ninty-sixth Olympiads refers to our own typhoid, autumnal fever scarcely admits of doubt, nor is it less certain that the "Hemitritæus" of Galen which he believed was compounded "of a tertian on a quotidian intermittent and particularly that variety designated bilious fever" refers to the same disease.

Thus the designation of the great Greek physicians says as plainly as words could tell it that they regarded the disease as of malarial origin.

Forestus, 1591, in his appellation "febris non pestelens," clearly separates this fever from "typhus," and in another name, febris lenta, he tells us that it is a "continued fever of long duration."

In the seventeenth century, Riverius, Willis and others, by the names they gave this illness, referred to its serious characteristics and give us much information of value.

Again in the eighteenth century, by its many synonyms, almost every peculiarity of the disease was described, but it was not until the early part of the nineteenth century, 1829, that Louis first gave this pathologic state the title by which we now prefer to distinguish it, viz., "typhoid fever."

A few years later, 1846 et seq., Ritchie and various other writers styled the disease "enteric fever," a name which has since been adopted by the College of Physicians of London in its nomenclature of diseases. This term is largely used both in England and the United States; it is, however, objectionable, since it describes a complex disease by one of its pathologic lesions and one, too, that does not invariably manifest itself during life by any discoverable symptom.

The most serious misfortune that has occurred to thwart and circumvent the recording of each event in the history of typhoid fever, was the unfortunate but well-meant suggestion of the late Surgeon Woodward, afterward surgeon-general of the United States army, which he made in 1862, to give to a supposed complex disease—which cannot exist—the designation of "typho-malarial fever." This proposal not only introduced confusion and ambiguity into the reports of many army surgeons and by so doing greatly impaired the value of the special statistics in regard to the two diseases which our noble and long-suffering soldiers were infected with during the Civil War; but it carried into civilian practice, when the army surgeons returned to their hearths and homes, a precedent that has ever since been a disturbing element amongst civil practitioners. It gives ignorant and unscrupulous physicians a pretext for making a vague and undefinable diagnosis of malarial fever, typho-malarial fever, instead of typhoid fever, enabling them to apply all of these names to different stages of the same malady.

GEOGRAPHIC DISTRIBUTION.

The geographical distribution of typhoid fever is from the nature of the disease necessarily quite or nearly coextensive with the geographical distribution of man. In other words, wherever man goes and carries the virus of typhoid fever, there will the disease find at least a temporary home. It is pre-eminently the serious endemic fever of North America, most parts of Europe, India and South America. Africa, Asia and Australia have all felt its ravages. Greenland and the frozen north, and tropical Mexico make for it an equally agreeable abode. Thickly populated New York, London, Paris, Berlin, Vienna, Melbourne, cities of modern times with the sanitary science of the nineteenth century at their disposal, ancient Rome, and the city of the ever changing Nile, Alexandria, that wonderful treasure house of the learning and lore of antiquity, Bagdad, gorgeous city of the plain, Bombay and Calcutta, cities of the Orient, the ice-bound and frigid wayside towns, the temporary resting places of the afflicted and mournful exiles to Siberia, our own Washington, the city of luxurious private homes and magnificent public institutions, the capital cities of the old world containing the enchanting palaces of their kings, shadowy, etherial Venice the bride of the Adriatic, the Phœnix like city of the lake, the tropical sea island cities, Havana, Columbo and Batavia, the tiny St. Helena and gigantic Australia are not exempt from its devastations. The disease spreads rapidly from Cape Town to Archangel, and from Rio de Janeiro to Sitka. Mecca, with its polluted holy wells of the Mohammedan pilgrims, and the assemblages at the shrine of Our Lady of Lourdes are

ready to add their mite to the all destroying virus. The city of the mountain with its pure and rarified air and that of the low and marshy plain alike are the prey of its poison. Patients are found in a Versailles with its bizarre contrivances for the unlimited water supply, that cool pure water so essential to health; in a gatchina, of an ideal climate, so temperate and regular; in an Ajuda endowed with the crisp and invigorating air of the mountain, and in the hovels of the very poor beneath their walls, for it recognizes neither poverty nor riches. It has found its victims in the very opposite conditions of life, amongst the uncivilized Indians of our western plains and the rustic natives of Mexico, the pigmy tribes and the wild and untamable races of Upper Egypt and the Congo—this newly discovered country already has it in its midst—and those barbarous savages of Madagascar are waiting to receive the care and attention as well as the medication of civilized medicine. Among the hills and rocks of New England, on the adamantine and impregnable rock of Gibraltar, on the Rocky Mountains and in the sunny south, at the mouth of the Mississippi and along the mighty Amazon, and the merry brook or rill making its way so hurriedly to the sea, hurrying and skurrying through meadow and wood, past hamlet and village, winding its circuitous course by stately mansion and homely homes, but leaving such dire disaster in its wake. Peopled continents and isolated, sparsely populated islands have all alike given it domicile. Indeed, there is no people or country that has been forever free from its unwelcome presence, and no remembrancer would be needed to recall to the mind of the poor wretch who had succumbed to its abhorrent and tormenting scourges the hell on earth through which he has passed.

CAUSES.

Predisposing.—Wide as is the geographical range of typhoid fever, not less indiscriminate is it in its selection of its victims among the human race. Both sexes of all nationalities are martyrs, the individual in every condition in life, the soldier in bivouac and his royal master in the palace, protected by "divine right" from all else; the begger in the street and the millioniare in his elysian demesne; the babe in the cradle and his nonagenarian grandsire; all mankind, who have not been previously immunized, if equally exposed to the poison, are alike susceptible to the disease. All observers agree that age exerts a controlling influence over typhoid fever. This is probably an error arising from several causes. First, very young children are not so freely exposed to the action of such pathogenic germs as could produce the disease, because the diet being principally milk, usually drawn from the mother's breast or sterilized, is not apt to give rise to any ill effects and being liquid takes the place of other drink, so that little water is imbibed. Moreover children residing at home with their parents or even in public institutions are confined largely to the one locality and soon become acclimated to the water they drink and for this reason are not so likely to have the disease. For the slow and gradual exposure of the organism to the noxious influences which cause typhoid fever, does undoubtedly create in the subject a temporary acquired immunity from the disease. But instances are not wanting in which children have shown their liability to attacks of this disease when exposed to its virus. Murchison quotes a case as reported by Manzini in which a seven months'

fœtus, which died within half an hour after birth, presented lesions of Peyer's glands, and infants have been known to die from typhoid fever during the first six weeks of life.

Ernest Hart, editor of the *British Medical Journal*, under the caption of "Water borne Typhoid," reports on page 85 of the issue of that journal of the 13th of July, 1895, an instance which proves conclusively that children possess no special immunity from the disease ; it was among the inmates of an institution that the fever spread, the immediate cause of the five hundred attacks being the chance drinking by some of the orphan children of the contents of a stream during one of their walks. The stream received the sewage from houses in some of which typhoid had occurred, and as a result of this consumption, thirty cases cropped up simultaneously in the asylum in children having thus drunk of the specifically contaminated water. The disease once introduced, was kept going until five hundred children had caught the infection out of some two thousand in the asylum.

Osler, analyzing 229 cases of typhoid fever, treated in the medical wards of the Johns Hopkins Hospital, gives the following as the ages of the patients : 5 to 15, 23 ; 15 to 20, 51 ; 20 to 30, 109 ; 30 to 40, 29 ; 40 to 50, 10 ; 50 to 60, 4 ; 60 to 70, 3. Thus it will be seen that nearly 50 per cent of all the cases occured in the third decade.

At from fifteen to twenty years of age, the beginning of the period of supposed greatest susceptibility, lads leave their homes to enter the universities, the military or naval academies, or the preparatory schools, or to take upon themselves their own support, or it

may be to seek a life of pleasure, and they are henceforth exposed to the greatest risk of acquiring the disease. Young maidens are sent to the cities that they may receive the advantages of metropolitan life or begin their peregrinations about the world in general in search of amusement or to earn their bread, and the non-immune constitutions yield readily to the strange noxa.

As one attack gives some immunity against typhoid fever, and as there can be no doubt but a large percentage of all those who are susceptible to the influence or the poison have been exposed and many may have had unrecognized or abortive attacks during the first half century of life, it is hardly necessary to look further for the cause of immunity, which has heretofore been accredited to age. It is probably true, therefore, that age so universally recognized as one of the fruitful predisposing causes of typhoid fever, should have no place in that category.

While there is no evidence that general weakness or debility or the exhausting effect of other diseases, exerts any predisposing influence toward typhoid fever, there cannot be the slightest doubt but the poisonous effluvia of decaying animal or vegetable matter or of human excrement, or that open sewers may so act. On the other hand none of these influences can act as exciting causes of that disease.

Exciting.—There is but one exciting cause of typhoid fever, viz., the invasion of the organism by the noxa of the disease, presumably a microbic poison, the bacillus typhosis, a water borne virus, the danger from which is rendered insignificant by the boiling of all the water and

milk used by the patients for drinking purposes. Oysters if laid down in sewage may and no doubt do sometimes convey the infection; but sea water is fatal to the bacillus typhosis, hence the danger from this source must be small indeed; besides it is even then but an indirectly water borne disease.

The pathological lesions peculiar to typhoid fever are so constant that the conclusion that the disease is of azygous origin is fully justified.

If no uncooked human excrements were eaten or drank typhoid fever would be a very rare disease.

INCUBATION.

The period of incubation of typhoid fever, as estimated by different observers, varies between such wide limits, that I cannot do better than quote the conclusions of the Clinical Society of Great Britain, from the *British Medical Journal* of the 20th of July, 1895, embodied in Dr. Hart's Report on "Water borne Typhoid."

Period of Incubation of Typhoid Fever.—The deliberations of the Clinical Society on this point are of great interest to us in connection with our subject, and it may not be out of place if I reproduce their short and pithy "Conclusions." (1892).

"1. The general conclusion to be drawn from all of the facts is that the period of incubation of enteric fever varies within rather wide limits. The interval between exposure to infection and the development of distinct symptoms is probably most often twelve to fourteen days. It is not very infrequently nine or ten days, occasionally eight, and possibly even less. According to Dr. Murchison, 'it may not exceed one or two days, but no case of the kind has been reported to the committee. In rare

cases it has been prolonged to fifteen, eighteen or even twenty-three days.' Dr. Murchison thought 'it very doubtful if the incubation period ever exceeds three weeks.'

"2. A person suffering from enteric fever is capable of conveying the infection to others throughout the whole course of the disease, from the date of the earliest symptoms of illness until convalescence has been established at least a fortnight.

"3. An epidemic due to milk contamination may be expected to cease at or about the end of the second week after the arrest of the contaminated supply; but an epidemic due to contamination of public water supply may not come to an end until the fourth week after the source of specific pollution has been removed. Where an epidemic can be traced to well water its duration may be very much more prolonged, and no general statement as to the probable date of its spontaneous termination can be made.

"4. Infection can be conveyed by fomites, and retained in them, probably for two months at least."

As a peculiar instance of the long period of incubation, Dr. Hart mentions as having been put on record by Dr. Blaxal "of the Local Government Board."

"At Fortune's Well, in the isle of Portland, there arose an outbreak of typhoid fever in 1886, after an absence of fifteen years, the infection being introduced by soldiers from Alexandria, four cases developing en voyage, and other six after landing, no one outside of the regiment being attacked on board. In these latter circumstances it can only be held that infection was derived in Egypt, and this being so there comes the fact that the period of incubation varied from eighteen to as many as

twenty-five days. Of the outbreak as it affected residents near a spring at Fortune's Well I need not speak; the facts in the appendix are clear to all, showing the source of the subsequent illness, some eighty cases, to have been due to polluted water."

Dr. Katzenbach, whose opportunity for measuring the period of incubation during the epidemic at Bayhead, New Jersey, was unusual, estimated that the last of the cases (assuming that the milk had been polluted but once) had a period of incubation of twenty-nine days, or that if Fred J., contaminated the milk the last time that he milked the cows then this patient's period of incubation was nineteen days.

CAN TYPHOID FEVER BE ABORTED.*

The answer echoed and re-echoed from the great thinkers of the profession we all love and practice—from all over the civilized world—is one prolonged and emphatic negative, nowhere more emphatically spoken than in the great representative body of American physicians, the American Medical Association.

At its last meeting, in the city of Milwaukee, the original papers on typhoid fever, the discussions on them, and the editorial comments in the society's journal clearly indicate this, and also that the medical profession is not at all agreed on its treatment. The most divergent methods were advised, some condemned what others strongly advocated, these again advising different methods, only to be condemned again, and all were finally disposed of by the editor of the association journal, who under the caption, "The Treatment of Typhoid Fever," says, "In the topic which heads this editorial the medical profession is certainly as much interested as it is in the treatment of pulmonary phthisis. The able papers and discussions which we have presented to our readers in the columns of this journal, during the past few weeks, have been of great value as reflecting the

*Read before the Mississippi Valley Medical Association, October, 1893. Revised 1895.

opinions of active practitioners whose practical experience is of inestimable service to less favored colleagues; yet the fundamental rules governing the management of enteric fever are not modified by these expressions of opinions. Difference in belief may exist as to whether intestinal antisepsis is desirable or obtainable in typhoid fever, and whether this temperature or that is to be treated as a dangerous symptom, but the important fact, that enteric fever is a disease in which good nursing and watching are the real factors productive in bringing about recovery is universally recognized. In typhoid fever, above all other diseases, the physician must recognize that a cure is impossible, that he can guide the patient through the storm but not stop the storm, that the only object he may expect to accomplish is the control of symptoms which directly or indirectly affect the patient unfavorably. While he may not be able to remove the cause of the symptoms, the very relief may be advantageous; then a delirium indicative of great physical or mental distress, or the presence of some complication inducing pain, may so exhaust the patient's vitality as to seriously impair his chances of recovery; and measures directed to the relief of these symptoms may save the particles of strength needed to carry the case over some crisis in his attack. There is, therefore, no specific or routine treatment by internal methods which should be resorted to when the diagnosis of typhoid fever is established, but there are two external methods, aside from feeding, which may be applied to so nearly every case as to be called routine, namely, absolute rest in bed, flat on the back, and the use of the bath in a more or less modified form; a simple mixture, designed to maintain free action of the kidneys

or stomach may be advised in each case, chiefly to comfort the patient and his friends, but beyond this nothing is to be used without a distinct indication by some prominent symptom. The necessity of absolute rest in early stages of enteric fever is known to every one, yet it often requires the most strenuous efforts on the part of the physician, particularly if he is not aided by a trained nurse, to maintain the degree of rest necessary. If there is one factor potent in rendering a prognosis unfavorable in enteric fever, it is the neglect of this precaution in the smallest detail, and every rising to stool may be regarded as a most unfortunate cause of future trouble and danger. The use of the bath, or more correctly water in any form, during typhoid fever stands next in importance and next in its approach to routine.

"It is a mistaken idea with many physicians that 'the water treatment of typhoid fever is solely indicated by high fever;' nothing can be more erroneous. While high temperature is, without doubt, a most important indication for the bath treatment, extreme restlessness is also a positive reason for its employment.

"Farther than this, there can be no doubt that the use of water not only lowers extreme temperature, but prevents its rapid return, and in some way advantageously modifies nutritional changes.

"Restlessness and insomnia accompanying fever too slight to require the full bath are often entirely relieved by a tepid sponging, which soothes the irritated skin and equalizes the circulation, refreshing and invigorating the patient. Each part sponged should be immediately rubbed dry, so that the patient may not be relaxed by soaking. We presume this does not apply to the cases of high fever, in which friction with the hand must be

used to bring the blood to the surface where it may be cooled. We have not tried to indicate in this article the medicinal treatment required by various complications, as space forbids, but we are sure that if these views be followed, complications will be less frequent and a firm basis maintained for rational measures sometimes necessary for the relief of accidents."

These are the expressions of the matured thoughts of the members, and of the editor of the journal of that association, of which one of the leading medical periodicals of Great Britain—a not too partial critic—said nearly a quarter of a century ago: "It is probably the most learned medical body in the world."

I do not believe the great American Medical Association has taken any retrograde steps, and I do believe that we may accept these opinions emanating from its members and from the trusted editor as coming not only from the most scientific and cultured medical body, but as the expression of the most advanced opinions of the highest medical authority in the world. And yet these are not extreme views. Everywhere one glances in medical literature one sees the same dark and gloomy picture of typhoid fever.

Now and then a new remedy is proposed, or some one advances slightly more hopeful views, but he and his futile hopes are soon buried in oblivion and his hapless patient in the ground, and no one dares to say that the physician ought to or can cure the disease.

I fully realize the responsibility he assumes, who would undertake to criticise adversely the teachings of an hundred generations of thinkers. It is said that "old beliefs die hard," and the one I propose to endeavor to destroy has all the charm of extreme antiquity. Long

before typhoid fever was isolated from typhus it was taught, as the great scientists of to-day teach, that it cannot be cured, but must run its course. Then a new era dawned—typhoid fever was recognized as a distinct disease, and yet the same theory was promulgated, and in almost the same language as is used in the tautology of the present day. Time passed; the medical profession made most wonderful strides in the pursuit of knowledge. It was found that many diseases—and amongst them typhoid fever—were due to or at least were accompanied by a germ in some sense peculiar to themselves, and yet the same doctrines were again handed down. Let us take them up with iconoclastic hands, and see if the pitiful story that typhoid fever cannot be cured may not be retold in a more cheerful and encouraging vein.

On the 17th of July last I read a paper in my local society in which I said: "Those of you who were present at the meeting of this society held in my office twelve or fifteen years since, when this disease (typhoid fever) was under discussion, will remember that in criticising a paper of one of the members I said: 'While the paper is in strict accordance with the teachings of the best authorities on the subject, I think it is so radically wrong that if you would leave undone everything that the author has said to do, and do everything he has said not to do, you would come nearer my idea of the correct and scientific treatment of the disease,' which I proceeded to give in every detail. It was not however well received. The author of the aforesaid paper condemned my doctrines most severely and forcibly. To his credit be it said, that he afterward, in an address to the society, remarked that although he had expressed his disapproval of these special therapeutic methods in the very strongest

language at his command, that these discussions had set him thinking. He told them that he had searched his library over and over to find any authority upon which I could have based my claims—that there was nothing in all of the medical books bearing on my very peculiar theory—but, nevertheless I was right and he would not again dare to treat a case of typhoid fever in any other way than in the manner which I had described and so enthusiastically advocated.

At this point I must express my regret that of my earlier cases of typhoid fever no bedside histories were recorded. No idea had entered my mind at that time of inflicting upon an already overworked and enduring profession my remarkable theories. The clinical memoranda and charts of many of the later cases are in my possession and are open to the inspection of any scientist of this society. They are well worth studying seriously.

I wish now to call your attention to a few cases of enteric fever, which illustrate the most marked results of my work during the intervening years while I was still investigating and experimenting with the many different kinds of antiseptics which were brought to my notice. I have selected, as example of the many, only such cases as were diagnosticated by able, clever and expert physicians, cases which bore such well-marked symptoms as were quite characteristic of the disease, or were surrounded by such circumstances as would indicate beyond the possibility of a doubt that they were really typhoid fever.

The limits of this paper will however only admit of the presentation of the most salient features of those cases which best illustrate a point, and in estimating their value it should be borne in mind that only a few of

the teachings of the editorial which I have quoted were followed in these instances. Many of these patients were allowed to get up or move about, or to go out of doors at pleasure. Nurses, trained or untrained, were allowed to sponge or not to sponge them. No other baths were given except to meet the ordinary demands of cleanliness. Very little effort was made to "control the symptoms." No "simple mixtures designed to maintain free action of the kidneys or stomach, chiefly to comfort the patient and his friends," were ordered. No medicine was ever exhibited for the purpose of directly reducing the temperature; and while the patient and his attendants were generally warned against the danger, real or supposed, of eating solid food, the warning was not always heeded. Some of these patients ate solid food on the seventh day of treatment; others on the twelfth day, and many were not restricted as to the diet any of the time, eating as they pleased.

The following cases which I treated between the years 1882 and 1892 have been selected as especially interesting. Of these I have no clinical charts.

On the 17th of July, 1882, I was called to see the son of Dr. F., after the attending physician had made a diagnosis of typhoid fever. I immediately put him on antiseptic treatment and he made a complete recovery in twenty days, his temperature having been normal several days when I discharged him.

A young gentleman died of enteric fever. Clara P. lived in the same house and had assisted in nursing him during his illness. Two or three days later I was called and made a diagnosis of typhoid fever, and in reply to direct questions said that she would probably be well in ten or twelve days. On my second visit I was

told that another physician had seen her before I had done so, made a diagnosis of typhoid fever, a prognosis that she would be ill four or five weeks at least. Her temperature went up to 104⅘° F. Tympanitis was well marked and rose spots were abundant. She made a good recovery, and was out to drive on the twelfth day.

The wife of one of our leading druggists, Mr. W. W. McK., had typoid fever from which she made a good though not a rapid recovery.

Mrs. Johnson W. and her son both had typhoid fever. Their recovery took place in eleven and fifteen days respectively. In both cases the symptoms were well marked.

Last winter, when typhoid fever was so fatal at Beaver Falls, Mr. L., Jr., was brought home with the disease, from which he recovered in twelve days. His symptoms were all characteristic of the disease.

Ulysses S. was brought home from a boarding house in Wampum, where at least one death had resulted from typhoid fever. Dr. Wickham, of this city, made a diagnosis of the disease, and treated him for three days, when I was called. I found a well-marked and typical case of typhoid fever, with a history of ten days' sickness. Temperature 105.8°; pulse 124 ; bowels very tympanitic, petechia abundant, tongue brown, hard and dry; stupor so profound that he could with difficulty be sufficiently aroused to show it. My first visit was made on October 25. The last on November 3, when he was sitting up. On November 10 he called at my office and settled his account.

When typhoid fever was so prevalent and so fatal near the corner of Bryson and Spring Streets, I was

called to see the two daughters of Joseph D. diagnosed as typhoid fever, by a nurse of long experience in nursing the disease. Found both cases well-marked. Both recovered in less than ten days. Mr. John H. W., who lived in the same locality and was ill at the same time, made a good recovery from the disease in ten days. His symptoms were all well marked and characteristic of the disease.

Thomas E., of Girard, came to my office to consult me; after examining him two or three times, I told him he had typhoid fever. He then informed me that his wife was also very sick; when I gave him medicine for her as well as himself and told him to send her to me as soon as possible. The next day I found her lying on the sofa in my office, having come by train five miles. Her temperature 104.3°; bowels very tympanitic and tender, all the symptoms pointing to a very severe attack of typhoid fever. She was told to come each alternate day to my office, as was also her husband. The latter was permitted to work at his usual occupation, that of a stationary engineer, throughout his illness. After a few days, Mr. E. told me that the doctors in Girard were laughing at him for going away from home to a —— fool of a doctor who would tell him he had typhoid fever and could work. I asked him if they doubted his ability to work. He said, "No, they know I can work, but they say I have not typhoid fever." I told him if that were true, when he and his wife had recovered that would be the end, while if they had typhoid fever there would be more cases around them. Within a few weeks thereafter I was called in consultation to nine or ten well-marked cases along the Little Valley in which they lived, and all within a stone's

throw of their home. After several had had hæmorrhage of the bowels, and four or five had died, there was no further question as to the character of the disease. The President of our county medical society, Dr. Gibson, can tell whether some of these cases were typhoid fever or not. So also can the distinguished ex-President of the Ohio State Medical Society, Dr. McCurdy. Mrs. Evans was not able to come regularly to my office, but had to miss occasionally two days at a time. She was refused passage on the train by one of the railroad companies, on the ground that she had a contagious disease, and had to travel by a less convenient route.

On May 8, 1893, I was called to North Jackson to see Mr. G. W. P., whose son had just died of typhoid fever, after repeated hæmorrhages of the bowels, and found Mr. P., who had nursed his son thirty-five days, had himself been ill with typhoid fever seven days. I assured him that he was in no danger of dying, and that he would probably be well in ten or twelve days. He had a normal temperature on the tenth day.

On the 27th of May, 1893, I was again called to North Jackson to see Wallace E., the son-in-law of Mr, P., whom I saw at once had a severe attack of enteric fever This opinion was not shared by his family physician, who promised should the patient continue to be ill, and if I would leave the case in his hands, to telephone me within two days in regard to his condition and the result of treatment. I heard nothing more of him however until I saw the notice of his death some time after in the local paper. Thus in this little outbreak of four cases of typhoid fever I treated the worst of the two cases that I saw and from descriptions given me of the other two cases, probable the severest case at the

outset of all of them, with result that my case recovered in ten days and all of the others died.

Prior to the date at which this particular series of observations begins, I had had large experience in the treatment of typhoid fever both in hospital and private practice with most unsatisfactory results, and when I listened to the various essays read in the section on the practice of medicine at the meeting of the A. M. A. in Washington, so antithetic in their recommendations for the treatment of the disease, I was reminded of these earlier experiences. My imagination pictured them in sharp contrast with the happier outcome of later years; and wishing that others might share with me the pleasure and comfort of curing a disease so much dreaded and that humanity might derive some benefit from any knowledge I might possess on the subject, I told the chairman of the section, Dr. Victor C. Vaughan, that if possible I would prepare a paper and read it in the section before its adjournment, and that in this address I would advise a more hopeful method of treatment for enteric fever. My work with the committee for the reorganization of the sections however took up so much of my time that the preparation of the paper was an impossibility. On the last day of the meeting Dr. Vaughan reminded the members of the section of my promise, and I then said that I hoped to be able to prepare and present a short report on the antiseptic treatment of enteric fever at the next meeting of the society.

On my return to my home I availed myself of the opportunity of criticising a paper on the treatment of typhoid fever read by one of the members of my local society, and after condemning some of the remedies advised as worse than useless, since they tended to aid the

disease to destroy the patient (a criticism justly applicable to many methods of treatment which have been advised by some very learned professors) I said, "I have long believed this disease to be due to a germ, whose earliest habitat in man is in the alimentary canal, thus the logical conclusion is, gastro-intestinal asepsis should be the prime object to be attained by the treatment, and when this can be obtained the problem of the abortive treatment of typhoid fever is easily and quickly solved. I believe that I have already acquired the knowledge necessary for its accomplishment. Will any member of the society aid me in making a demonstration of the fact? If my proposition is agreed to, I will not only provide all medicine but will make no extra charge for my own work and will allow all fees to go to the physician in attendance originally, making my visits in his company so that he may follow me in all of my course."

I then consulted the president of the Ohio State Medical Society as to the propriety of publishing a paper on the antiseptic treatment of enteric fever and was advised not to do so until I had sufficient evidence to prove to the medical profession to its entire satisfaction that the methods in vogue could be improved upon. As I was anxious to present a great array of aborted cases of typhoid fever which had been controlled by the antiseptic treatment, and as I had received a letter from the mayor of New York on the subject I went to that city and spent a week seeking an opportunity to demonstrate the curability of the disease, under the observation of some of the famous professors of the metropolis. Failing to accomplish what I wished I returned home quite discouraged. I tried Philadelphia next, and for ten days devoted myself to a fruitless effort to have some one give my

method of antisepsis a trial in one of the great city hospitals, without publishing a treatment that might prove valueless or misleading. Again I returned to my home, this time most truly disheartened. Although I believed myself able to cure one of the most fatal diseases of the Mississippi Valley, I did not dare to give to the world a treatment the action of which I could not explain and which on a more thorough trial might turn out to be a failure in the hands of more able but less enthusiastic practitioners.

After this I corresponded with the heads of the health departments of all of the principal cities of the United States and Canada; and to the honor of all of the gentlemen who were connected with these departments not one of them hesitated or failed to furnish me with all of the information in their power; often at an outlay of great labor and no doubt great expense. A marked contrast to the treatment I had received elsewhere. I extend to them one and all my most earnest and hearty thanks.

During the intervening years, I visited most of the large cities of the United States from the Potomac River to the Pacific coast. In Pittsburg, in Saint Louis, in Washington, I gave the resident physicians of the largest hospitals where typhoid fever was treated, the best knowledge on the subject that I possessed at the time. They politely promised to test my method of managing the disease and probably forgot all I had said before dinner. In Chicago, I succeeded in interesting the Commissioner of Health, Dr. John D. Ware, in my work. He asked me to give him a letter which he might show to the superintendents of the hospitals. As this letter and the answer to it, may become in the future, interesting reading, I present them here:

YOUNGSTOWN, Ohio, May 5, 1892.

JOHN D. WARE, ESQ., M. D.,

Commissioner of Health, City of Chicago.

My Dear Doctor: You are aware, that in writing in fulfillment of my promise to you and in giving expression to my peculiar views of typhoid fever, I am winning for myself the uncoveted cognomen of "crank." You will remember I told you that I believed the life of every uncomplicated case of this dread disease could be saved; that I believed the disease could be aborted and that I also believed the excreta, from properly treated cases of typhoid fever would prove to be innocuous. Long before I even hoped for such results, I believed that the disease was due to a germ; that the germ was in the earlier stages of the disease, confined to the alimentary tract; and that if the entire tract could be saturated with a germicide at once fatal to the germ, and harmless, or better still, beneficial to the patient, the happiest results would follow.

That I have been for fifteen years, doing all this, without having published a word about it, should not be a discredit to me, since it has taken years of testing, to satisfy even myself, and no one likes to have to eat his own words, especially after they have gone into cold type.

Now, Doctor, if you can, as soon as possible, secure a ward for male, and one for female patients, with a day and a night nurse for each ward, and give me as many cases as possible, none of which have had the disease more than eight days, I will go to Chicago and appear before a Committee of your selection, consisting of members of the regular profession, upon whose judgment, and integrity you could rely; explain to them fully my plan of treatment, and if they find any medicine that I wish to administer is, in the proper dose, dangerous, they shall refuse permission to make the test, but for no other reason; you to invite any members of the regular profession, as many as you wish, to watch the patients from day to day, and if my test is entirely satisfactory, I am to have the privilege of giving the treatment to the profession through the American Medical Association.

Very respectfully,

JOHN ELIOT WOODBRIDGE.

In reply I received the following letter:

CHICAGO, May 27, 1892.

JOHN E. WOODBRIDGE, ESQ.,

YOUNGSTOWN, OHIO, No. 29 W. Federal St.

My Dear Doctor: Your letter of May 5 arrived while I was away from the department, sick. I did not return till the 20th., and have endeavored, from that day till this, to interview the physicians at different hospitals relative to the subject matter of your letter.

Replying, I will say, I have seen the superintendents with whom I thought possibly I might prevail upon to coincide with our views relative to treatment of typhoid fever. I have also talked with some of the prominent men in the profession, and I believe without a single exception, each and every one of them have said this: "Why does not Dr. Woodbridge read his paper before the National Association next June?"

I have said all that I could say relative to the subject which is one that I have become deeply interested in, but being only one man, it has been impossible, apparently, to make any impression upon the members of the profession.

By reading between the lines you will probably understand more than is written. I do sincerely hope that you will read this paper before the National Association as I believe that it would result in a revolution in the treatment of this disease.

No one would dare question your paper so far as your results in the past have been concerned, no matter how skeptical they might be in other matters.

Trusting that you will pardon the delay in replying,

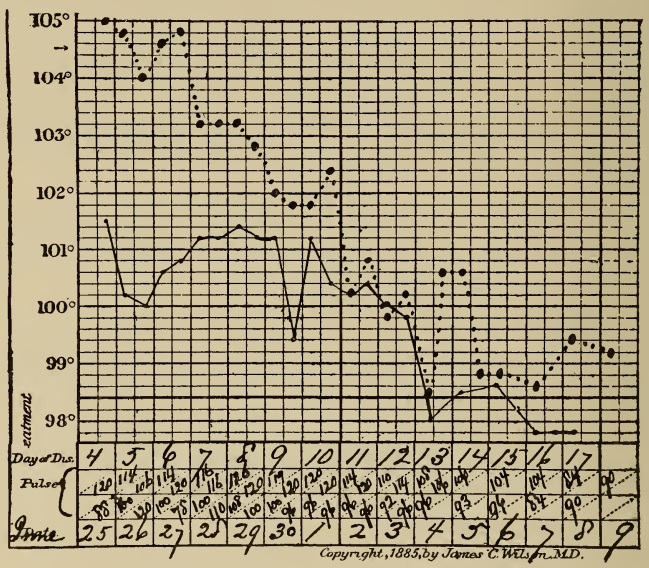
I am, sincerely yours,

JOHN D. WARE, Commissioner of Health.

Finally, after having spent years of valuable time, much money, and traveled many thousands of miles, I heard of the epidemic of typhoid fever at Ironwood, Michigan, and although I had been too busy to go to the Milwaukee meeting of the American Medical Association a few days before, I again sacrificed both time and

money, and in a day was on my way to the scene of the worst epidemic of typhoid fever of which I have any knowledge. The disease presented largely the characteristics and symptoms, so common in our sporadic cases. In some instances, however, the poison seemed to be so virulent, as to lead one to despair, almost from the very outset.

A good representative of this class, was Miss T. S. Case, No. 22, whose bedside chart I hand you. When



seen on June 25, 1893, her pulse, as you will see, was 120; her temperature, 105; her bowels were intensely tympanitic; marked dullness over the spleen; tongue dry, hard, and brown; slight wandering delirium, which soon became so profound that we were unable to take her temperature under the tongue again for several days. Altogether, her condition was so bad that the attending physician, Dr. McLeod, a gentleman of un-

usual ability, after the examination was completed,* turned to me and said: "You don't want to treat that girl; she will surely die." I answered: "Not if I treat her." After our second visit, Dr. McLeod said as we went away: "If you can cure that girl, you are a 'dandy.'"

She began to improve on the night of the third day, at which time Dr. McLeod came to my hotel to tell me that she was exceedingly delirious; pulse 140; temperature, as well as could be taken in the axilla, in her extremely restless condition, was 104.8; her bowels were exceedingly tympanitic; and she was bleeding so profusely, that he had to plug both posterior, and anterior nares. The amelioriation of all these symptoms was rapid and the temperature touched normal on the tenth day of treatment.

In the same room with T. S., Case No. 22, lay her sister, P. S., Case No. 23, who had been taken sick at the same time; an equally typical case though somewhat milder; her temperature, as you see, was never high, and was subnormal on July 4, the ninth day of treatment.

The chart of Mr. F. S., Case No. 24, is very interesting,as showing the result of treatment, after continued reinfection. The case bade fair to be a very severe one, but the temperature of 103.2, on June 26, dropped to 99.4 on the 30th. It again rose, on discontinuing treatment to 104.8, on July 2, when investigation showed, that he had been drinking water from a well, from which a dozen very severe cases had originated.

Case No. 25. Mrs. M. T., whose temperature was in the afternoon of June 25, 103 degrees, and on the fol-

* This conversation occurred while making a tour of the Typhoid Fever Hospital, and seeing patients in private practice, with the leading physicians of Ironwood, who had very kindly consented to place under such treatment as I should advise, all cases of the disease which I was willing to make an effort to abort

lowing morning, June 26, 103.8; touched normal on July 9, the fourteenth day of treatment.

Case No. 26. Charles O., had on June 26 a temperature of 101 degrees, on June 28, 101½. He was up, and dressed on the following day, when his temperature had dropped to 100.5, and it touched normal on the eighth day of treatment, but went up to 100 degrees on the eleventh. He was discharged on the 14th day of treatment.

Case No. 27. Mabel T., was one of five cases in the same house, every member of the family having the disease. Her temperature was on June 25 (the first time I saw her) 103 degrees, pulse 120. The following morning it was 103½, and soon afterward was 104 degrees, had been reduced to 98.8 degrees, with a pulse of 84 on the 5th of July.

Case No. 28. Mrs. T., aged 51, had on June 25 a temperature of 101.5, pulse 104 which was reduced to 98 degrees on July 4, with a pulse of 76.

Case No. 29. Charles E. E., aged 45; on June 30 had a temperature at 10:30 in the morning of 100.4; in the evening was 102.8, and at 8 o'clock was 103.6; was reduced to 98.6, on July 8.

Case No. 30. John A., aged 33 years, at 7:30 P. M. had a temperature of 103, pulse 84. This was reduced, on July 8, to 98.6 degrees.

Case No. 31. Mrs. L., aged 31 years; had June 25 a pulse of 96, and a temperature of 102. At noon the following day 102½, and was subnormal on July 6.

Case No 32. Eddie T., aged 12 had a temperature of 101.6 degrees on June 25, with a pulse of 80, was very hungry on the 27th and 28. His temperature afterward went up to 102½, but was on July 8 subnormal.

Case No. 33. Mr. M., aged 20 years; on June 25 had a morning temperature of 102 degrees, which on July 9 was 98½; pulse 63.

Case No. 34. Albertina O., aged 16 years; on June

28, with a pulse of 120, had a temperature of 103.8; which on July 9 was normal.

Case No. 35. Ed. O., aged 25 years; came under my care on the afternoon of June 25; had been sick eight or nine days, and proved to be a very obstinate case, the temperature being 104 degrees on the third day of treatment, and 103.6 on the sixth day of treatment, from which it dropped to normal on the fourteenth day, with a pulse of 72.

Case No. 36. G. T. G., aged 28 years. This patient was admitted to the hospital at 3 o'clock P. M. of June 26. Pulse 80; temperature 97.4, but with the other symptoms so characteristic of the disease as to leave no doubt in my mind that he was entitled to admission to the Typhoid Fever Hospital. The disease did not yield readily to treatment. On the fifth day his temperature was 104. Went below normal on the ninth day, but went up again to 101, whence it gradually dropped to 97 degrees on the fourteenth day of treatment.

Chart No. 37. John A., aged 32 years. He had been sick three days when admitted on June 24. His treatment may be regarded as a failure. His temperature was 100.6 when last seen on July 9. He had probably been ill longer than we had supposed.

We made two or three such mistakes. One of the cases selected on the supposition that he had been ill less than eight days, was found to be dying of perforation of the bowels when we went to him to administer the first dose of medicine. Another case, after having been put under treatment, showed conclusive evidence of having been well along toward perforation, died a few days later.

These records were kept by the physicians attending the patients, and by the trained nurses in the Typhoid Fever Hospital. The physicians were all gentlemen of

unusual talent and capability, and of very large experience in the diagnosis and treatment of typhoid fever. Dr. McLeod, the able Superintendent of the Union Hospital, is a gentleman who would be an ornament to the profession in the world's most enlightened capitals. Dr. Neven, the Health Officer of the city of Ironwood, is a gentleman whose skill and ability were factors of prime importance in fighting this fearful epidemic. Under his magic touch, the conception of to-day became the finished work of to-morrow, and the armory, resounding now to officers' commands, became an hospital for typhoid fever, perfectly equipped under his able superintendence, and instead of echoing to the soldier's martial tread, the soft footfalls of a corps of trained nurses, scarcely broke the silence. It is enough to say of these nurses, that they were trained, in the city of Chicago. It was the freely expressed opinion of both physicians and nurses, that they had never seen typhoid fever patients do, or feel so well.

I present here a letter, voluntarily handed me by Dr. Neven :

IRONWOOD, Michigan, July 9, 1893.

This is to certify, that all the patients, whose bedside histories are in the hands of Dr. Woodbridge, were diagnosed as cases of typhoid fever by Drs. McLeod, Holmes, Neven and Woodbridge, in the city of Ironwood, State of Michigan, and that they were all under Dr. Woodbridge's special treatment, no other medicine being exhited during their sickness.

I also can state, that in no case did any serious condition arise, as did in other cases, treated side by side, by the same physicians, with the older, most approved methods of modern treatment.

J. K. NEVEN, M. D.,
Health Officer of the City.
Physician in Charge of Typhoid Fever Hospital.

The original bedside charts of all the cases treated, either in the Typhoid Fever Hospital, or in private practice, as verified by the physicians in charge, are in my possession and open to the inspection of any one interested in the advancement of science.

Dr. McLeod, of the Union Hospital, Dr. Neven, of the Typhoid Fever Hospital and their corps of assistants and nurses are entitled to the highest gratitude and thanks of humanity for so ably furthering and assisting me in these important investigations.

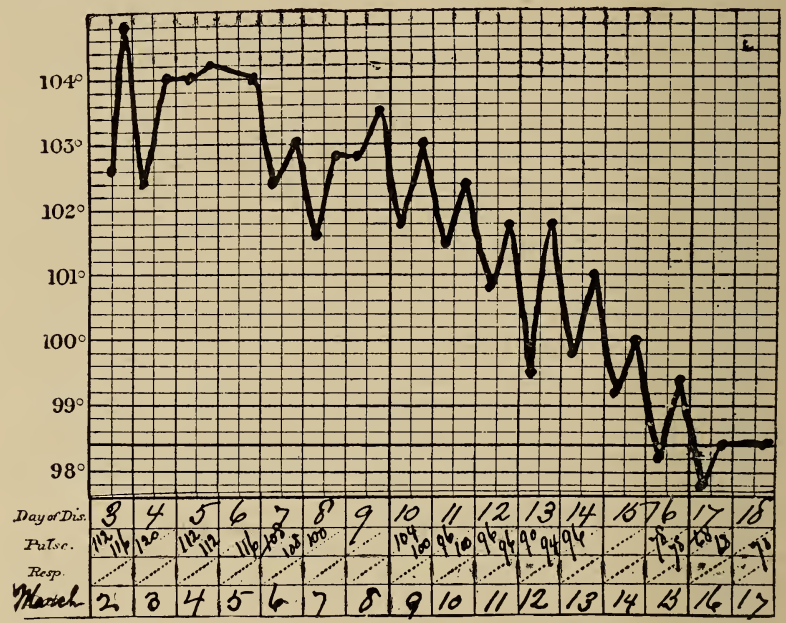
Immediately upon my return from Ironwood, I read a paper in my local society, giving a lengthened account of my investigations and of my work on the subject of typhoid fever up to that date, July 17, 1893, exhibiting the original charts and letters from Ironwood, as evidence in part of the truth of my oft reiterated declaration that typhoid fever can be aborted, and that death is a wholly unnecessary consequence of the disease. I reminded the society, that thirteen years previously I had outlined before that body, the treatment which had given me such brilliant results.

I wish now to present the clinical charts and brief reports of a few of the most interesting and characteristic cases which I have treated since my return to my home from my sojourn in the north of Michigan.

On the day my paper was read in my local society, I was called to see Ed. M., (Case No. 38, the chart of which is now offered for inspection).* I found him with a temperature of 104½°. The next day it was 104.4° and the day following, 104.8°, from which time it gradu-

*The cut of this and many other charts which appeared in my earlier papers have been mislaid, but as they had been freely exhibited it was not thought necessary to reproduce them.

ally declined to normal on the morning of the eighth day of treatment, although he had a rise of temperature for several days thereafter; he walked out on the eighth day; ate a slice of bread on the tenth day for supper. For breakfast on the eleventh day, he ate two slices of bread, two eggs, and two cakes, and continued eating heartily from that time.*



On July 24, Leo M., Case No. 39 son of Case No. 38, was taken sick, and on examination, gave the following register: Temperature 102½ in the morning, which rose to 104⅘ on the fourth day, and 105 on the fifth day of treatment; pulse 112 the first day, 160 the fifth day; the bowels became intensely tympanitic, rose spots appeared in profusion, and all the symptoms pointed to

* The mention of this indiscretion must not be understood to mean that it was sanctioned by me.

an exceedingly severe attack of typhoid fever. Turning to Mr. M., with the thermometer in my hand, indicating a temperature of 105°, I said, "Fifteen years ago, had you been lying there with typhoid fever, your wife also showing well-marked symptoms of the disease, and these symptoms present in this boy, I should have said sadly: 'He is very ill with typhoid fever; he will probably be sick four or five weeks, or longer;' and if asked for a prognosis, would have said: 'He is in great danger;' now I cheerfully say: 'He has typhoid fever; he will probably be sick ten days, or two weeks, or may be mildly sick somewhat longer. There is no danger.'" The temperature touched normal on the sixteenth day of treatment.

These cases were examined at various times, by Dr. H. H. Hahn, Dr. Thomas, and Dr. Robert Gibson, President of the Mahoning County Medical Society, and all were positively diagnosed as typhoid fever. You will find the statements of these physicians on the original charts.

Case No. 40. Mrs. M. Her symptoms were decidedly characteristic, although her temperature was not high at any time nor was she confined to her bed all of any day. The temperature touched normal on the eighth day of treatment.

On August 11, 1893, I was called to see Lizzie, Case No. 42, who had been sick a few days prior to August 1, when she first consulted a physician, who reported a temperature of 103° on that day. He treated her four or five days, when another physician was called who did not fully make up his mind whether she had typhoid fever or not. I was then called, and found a temperature of 104½°. I hesitated whether to attempt antiseptic treatment at so late a day; for six days, the afternoon temperatures were, 104.5, 103.5, 103¼, 102.6,

101¼°, 101.2°. The pulse ranged from 90 to 96. The improvement in the patient's general condition, however, was greater than the fall in temperature would indicate. She became cheerful, complained of hunger, and wanted to get up; the bowels, which had been tender, and very tympanitic, lost for a time, all tenderness, and tympanites. Both, however, returned in a slight degree, after a few days, and the temperature remained above normal for two or three weeks, all antiseptic treatment having been abandoned after the twelfth day. This case is interesting, as showing the effect of what I believe to be germicidal treatment, even when too late to abort the disease.

While visiting Case No. 42, I was called to the next house to see the daughter of Ex-Marshal Crowley, Case No. 46, whose symptoms of typhoid fever were well-marked. Her temperature was 103°, pulse 112. She recovered in less than a week.

On September 17, 1893, I was called to see John H., Case No. 41, positively diagnosed as typhoid fever by four physicians. His symptoms were well marked, and rose spots very abundant. His pulse and temperature ran a very common course; I give them daily under the dates:

September 17. Temperature, 103:6°; pulse, 92.
September 18. Temperature, 104.6°; pulse, 92.
September 19. Temperature, 104.8°; pulse, 98.
September 20. Temperature, 103°; pulse, 80.
September 21. Temperature, 102½°,
September 22. Temperature, 102.2°; pulse, 78.
September 23. Temperature, 101½°; pulse, 76.
September 24. Temperature, 100.6°; pulse, 72.
September 25. Temperature, 100.6°; pulse, 70.
September 26. Temperature, 97.6°; pulse, 64.
September 27. Temperature, 98½°; pulse, 68.
September 28. Temperature, 98.2°; pulse, 64.

On September 29, I was called to see Case No. 47, Ralph H., brother of Case No. 41. He was living in

the same house with his brother when taken ill and is now lying sick with typhoid fever. I will give his chart in a future paper, as well as six or eight other charts of cases now under treatment.

On the 23d of September, 1893, I was called to Washingtonville, to see William W., Case No. 48, sick with typhoid fever, diagnosed by his attending physician, Dr. Powers, confirmed by Dr. Bertelott in consultation. His temperature was normal on September 29, and so continued till he was quite well.

I have made in this paper a brief summary of some of the worst cases and worst results I have had in my private practice for more than twelve years, during which time I have had no death from typhoid fever. During the same period, I have had a large number of cases, in which a diagnosis of typhoid fever was made, but which recovered in from three to twelve days, without presenting pathognomonic symptoms of the disease. The remarkable success I have had in these cases leads me to hope and believe that the alimentary canal should be thoroughly asepticized, at the earliest possible moment in all suspicious cases, and that by so doing, only good fortune will ensue.

Keenly alive to the ignominy and disgrace that await me, should future observations contradict the results and conclusions of the past; aware, too, of the danger of the too implicit reliance on a limited number of observations, and with all due respect, for the teachings of the great thinkers of the profession, whose wisdom has, with strange unanimity, taught the contrary, I yet wish to answer my question: "Can Typhoid Fever be Aborted?" in the affirmative.

CAN TYPHOID FEVER BE ABORTED.*

In my last paper, published in the current issue of the *Journal of the American Medical Association*, I concluded the history of my cases with a partial report of Case No. 41, John H., who had not at that time recovered from his illness, and with the promise that I would report the case of his brother, Ralph H., Case No. 47, together with six or eight other cases which were under treatment at the time the article was written. Some of these patients recovered without having developed pathognomonic symptoms of typhoid fever, and consequently cannot be reckoned as such.

Case No. 41. J. H. This case is especially interesting. I was not aware until several weeks after his recovery, that his attending physician, a personal friend of mine, after having made a diagnosis of typhoid had been discharged, and myself called, although I did think the family unusually inquisitive, when I gave a diagnosis of typhoid fever, and a prognosis of ten or twelve days' sickness, no danger. On the seventh day of treatment, when the rose spots were abundant, and other symptoms well marked, I asked Dr. Thomas, one of the best diagnosticians in our society, to examine him, and make a diagnosis; he did so and said at once, "that is typhoid fever, and I will sustain you in that diagnosis at any and all times," and added, "my experience with cases of this character is, that recovery is slow and tedious." I said, "I shall ask you to come here in two or three days to see a case of aborted typhoid fever." I also inquired. "Doctor, would you dare to give this man solid

*Read before the Mahoning County, Ohio, Medical Society February 12, 1894.

food?" "If he were my patient I should certainly not," he said. Turning to the man, I told him of the opinions held by the best thinkers of the profession, in regard to eating solid food, warned him of the supposed danger and then asked him if he would be willing to eat a piece of beefsteak. He said yes, if I advised him to do so. However, even after I told him it must be on his own responsibility, he ate the steak without ill effects, and on the ninth day, I asked Dr. Thomas to re-examine him, when his temperature was found to be 97°. He was discharged cured, on September 28.

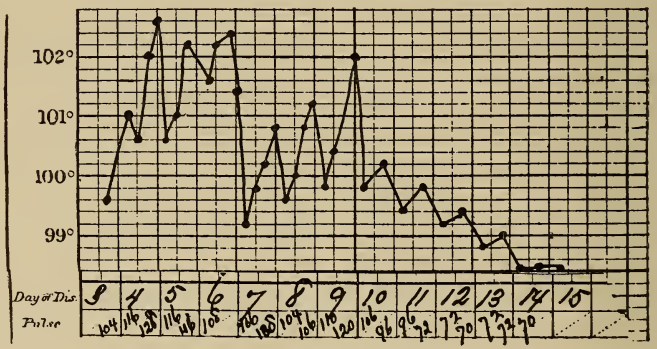
Case No. 47. Ralph H., brother of Case No. 41, residing with him. He was taken sick on September 29; pulse, 100; temperature, 103°. The appearance of the tongue, the severe headache, and all other symptoms were characteristic; later rose spots were abundant, and dullness over the spleen was well marked. After treating him five days, I wished to be away at the meeting of the Mississippi Valley Medical Association and the World's Fair, so I asked Dr. McCurdy, a member of our society, to take charge of him, together with Cases Nos. 43 and 44, which he did, continuing my treatment, so that in all of these cases I had the advantage of his valued confirmation of my diagnosis. The temperature of the patient touched normal on the twelfth day of treatment.

Case No. 45. William W. This patient was seen in consultation with the attending physician, but lived at so great a distance that I was only able to see him twice. On my first visit I found the temperature 104.8° and within the next twenty-four hours it went above 105°, this being the eleventh day of illness. When I saw him again four days later, the temperature had dropped to 103.2° notwithstanding which his friends entertained little hope of his recovery, so serious seemed his condition. However, he steadily improved, and five days later his temperature was normal and his recovery rapid and complete.

Case No. 49. William T. On October 31, 1893, Dr. J. J. Thomas, who had seen the result of my treat-

ment in two or three cases, telephoned me that he had a typical case of typhoid fever to which he would like to have my treatment applied. After examining the invalid I expressed the opinion that he had been ill more than ten days; that there was but a limited area of intestine involved, but that it was bordering closely on ulceration. Although the temperature was not high, he did not recover entirely for eighteen days.

Case No 50. B. C. W. W. This case presented well-marked and characteristic symptoms. Recovery followed by alopecia.



Case 51. Angus McP., aged 27 years. In the evening of January 22, I was called to see this patient. After examining him, I said: "This man has had typhoid fever more than two weeks." They answered: "Yes, he had a chill two weeks ago last night." The next morning I took Dr. McCurdy with me to see him. We failed to get the morning temperature, which the night before had been 105½°. He was voiding both urine and feces, involuntarily; his teeth, gums, and lips, were covered with sordes, which his faithful nurse, his wife, was unable to keep cleared away. His bowels were intensely tympanitic; in short, all his symptoms were characteristic. I hand you his chart, to show the result of treatment during the first few days, which has since been far from satisfactory, and the end is not yet.

Case 52. Willis H., aged 9 years. On returning from my first visit to Case No. 51, on January 22, I found a gentleman waiting to have me go to see a child, who was supposed to have typhoid fever. He had been with his mother, who was nursing her brother, through a five weeks' attack of the disease. His symptoms were all well marked, the temperature being 104$\frac{4}{5}$°, when I made my third visit on the evening of January 23. Dr. Barnes examined him and confirmed my diagnosis. The temperature was below normal on the tenth day.

Case No. 53. Guy H., aged 6 years, brother of Case No. 52, was taken sick on January 28 with characteristic symptoms of the disease ; pulse 112 ; temperature 104°. He recovered, however, before a positive diagnosis could be made.

Case No. 55. Thomas M. On February 6 I was called to see this patient, who lived within a few rods of Case No. 51, his helper in the mill, and his friend and nurse during his present sickness. His symptoms were characteristic and indicated the beginning of a very severe attack of typhoid fever. His chart shows the result of treatment to the present time. After visiting him two or three times I told him he had typhoid fever, but as treatment was commenced so early he would be able to sit up and eat solid food in a few days ; and that there was no danger of his being as sick as his friend (whom I did not see until the sixteenth day of illness), or of dying. Dr. Robert D. Gibson, the last President of the Mahoning County Medical Society, visited this case with me and confirmed the diagnosis.

Case No. 43. Frank V was a rather severe case of typhoid fever. I saw him first on September 27. On September 30, the fourth day of treatment, the temperature was 104$\frac{1}{2}$°. Three days later, I left him with a temperature of 101.7° in charge of Dr. McCurdy, who confirmed the diagnosis, and continued the treatment, and discharged him cured on the fourteenth day of treatment. I had attended his brother through an attack of the same

disease, some time before, from which he made a most satisfactory recovery; however, I did not keep a special record of his case.

Case No. 44. Mrs. F., was the third case of typhoid fever left in Dr. McCurdy's care at this time. He confirmed the diagnosis, and continued the treatment and discharged the patient on the eighth day.

Cases Nos. 40, 46 and 53, are excluded from the estimates of my cases, because they recovered before a positive diagnosis was possible, as is also Case No. 42, because there was unquestionably ulceration of Peyer's glands, before I was called.

With the exception of one patient who was dying when I was called, in consultation with the attending physician, and one other case, who had been sick thirty-five days when I saw him, and who afterward recovered, and a few doubtful cases, who were well before a positive diagnosis was possible, these are all the cases of typhoid fever I have seen since my last paper was written. They round out more than twelve years of active work without a death in my private practice from this disease; while my brother practitioners are having no better average results than I had in former years when my death rate was so high. Accept them for what they are worth, as additional evidence that my prediction that typhoid fever can be aborted, and that the life of every uncomplicated case of typhoid fever can be saved is a valid one. That this claim will be hotly contested, no one familiar with the most recent literature on the subject can doubt.

What a contrast when compared with my personal experience during the first sixteen years of my practice, which amply justifies the editorial quoted in my first paper, when my death rate was enormous, and the average duration of illness of those who recovered, as accurately as I can

estimate it was more than thirty-four days. As these estimates are made from memory, aided by very insufficient data, the accidental omission of some of the milder cases, may make both death rate and duration of disease too high. But, giving myself the benefit of the doubt, and excluding the large percentage of those who died, the estimates show that those who recovered, did so after more than a month of sickness, that must have left their constitutions fearfully shattered. They recovered, too, probably more in defiance than as a result of treatment—a sad commentary on sixteen years of careful, and conscientious work, according to the best light obtainable from any text-book within my reach at that or at the present time, as far as internal medication is concerned.

Do not understand me to state that the result of treatment during all these sixteen years was equally bad. In 1876 a new light began to dawn on me, and during the following seven years, to the beginning of 1882, when I had my last death from typhoid fever, my results were manifestly better, not alone in a greatly reduced death rate, but also in a great shortening of the average duration of sickness. In 1880, believing myself to be in possession of valuable knowledge on the treatment of typhoid fever, which ought to be given to my brother practitioners, I took advantage of the chance which was offered when a paper was read on the subject in this society, by one of its ablest members, to advance my own theories and doctrines on this subject of so much magnitude, and was much chagrined to find my critique almost ridiculed, and shall I say, contemptuously listened to by some, and myself standing entirely alone in the advocacy of a method of treatment which, though crude indeed, had yielded to me most excellent results, as compared with my early experiences.

Years passed, and in 1891 another paper on the same subject was read in the same society, advising a course of treatment, only a little worse than the one I had so mercilessly criticised eleven years before. In commenting upon this last paper, after showing why its recommendations were not only unwise, but absolutely dangerous, and driving its author to the refuge of the high authorities he had copied, and to the further statement that he had advised the remedies I had condemned as dangerous, *in small doses only*, I said that I had long believed typhoid fever to be due to a germ, whose earliest habitat in man was the alimentary canal, and that when a germicide powerful enough to destroy the germ, without detriment to the patient, could be brought in contact with it, that the problem of the abortive treatment of typhoid fever would have been solved, and that I believed the means of doing this were already at our disposal.

The questions now are, what are these very important ingredients and how are they to be brought in contact with the germs which they are intended to destroy, and what other object, if any, are we to seek to accomplish that we may most speedily restore our patients to their normal condition of health.

I must confess myself at a loss how to approach this part of my subject. Admitting that the germ enters the system most frequently with the water and food taken into the stomach, finds lodgment there, and multiplying, finds its way into the small intestines and further. I conceive that he will treat typhoid fever best, who best measures the condition of his patient, or rather the extent of territory over which the germs have spread, and the amount of mischief already done, and having done this, so selects and applies his remedies as to most speedily stop their ravages, and

most effectually relieve the patient of the ptomaines, tox albumens, injuries to Peyer's glands, or other ill effects of their temporary sojourn. This is, I fear, a much too difficult task for me to undertake to-night. Some time in the future I hope to give expression to my views on these points, but at present I think I can do no better than to give the treatment of two or three typical cases of typhoid fever in connection with their bedside histories.*

My cases have been too few to establish the value of my theory of treatment, but they have been too many and the results have been too good to admit of longer silence on my part, hence I deem it my duty to at once present such evidence as I have to the end that humanity may have the earliest possible benefit of my discovery.

Thus far in my private practice I have had no death from typhoid fever in twelve years. I have been able to abort two or three cases which were first seen on the tenth day, and all of those cases which came under my care on or before the eighth day of sickness. It may not be possible to abort every case when the patient is first seen as late as the eighth day, nor is it necessary, for when the members of the medical profession and the people understand that typhoid fever can invariably be cured when the proper treatment is instituted at a sufficiently early stage of the disease, the physician will no longer wait until his patient is covered with rose spots or has one or more hæmorrhages of the bowels before making an exact diagnosis or beginning proper treatment.

In conclusion, I beg that you will understand, that in criticising these papers which were written by physicians of

*The treatment and prescriptions used in these cases have been omitted in this revised paper to avoid repetition, and because since the paper was first published they have been somewhat modified.

Youngstown, I wish to cast no slur on my colleagues in this society. Their work was neither better nor worse than that of the most learned members of the profession. I am sure that my associates of this society are the peers of an equal number of the members of the medical community in any spot on the globe, and when I invite their criticism of my reports of cases, of my unusual and singular ideas, and of my declaration that there are *well* known drugs which do not only shorten the course of this disease, but the action of which in typhoid fever is in the highest degree abortive, I feel that I am standing before a tribunal, which would find errors if there were errors to be found.

CAN TYPHOID FEVER BE ABORTED.*

As a preface to my paper, I wish to acknowledge my indebtedness to the president of this society, to our last ex-president, to the president of the Ohio State Medical Society, now present, to Dr. Thomas, Dr. Barnes, Dr. Dickson, and to all other physicians who have confirmed my diagoses and watched the result of my treatment of typhoid fever, or in any other way have aided me in my efforts to demonstrate the curability and non-fatalness of the disease. I wish also to thank them for their many kind and complimentary remarks made during the discussion of some of my previous papers. Having my work characterized as the "greatest discovery of the age" by one member; my name associated with that of Jenner, by another; and to have a third give expression to his pride, that a member of this society has done so great a work for humanity, would be exceedingly gratifying to me at any time, but especially so just now, when I am promulgating ideas, which must arouse the indignation of every great professor of the principles and practice of medicine in the world, because they, if true, will convict him of having taught errors, that have not only cost hundreds of lives, but have discouraged all investigation in this most important field. At this time too I must incur the bitter hostility of a large class of physicians, who not daring

*Read before the Mahoning County, Ohio, Medical Society, March 12, 1894, with the records of the recovery of the cases reported in second paper, also the reports of cases of typhoid fever in the McPhee family, who were attacked by the disease after this paper was read in the society (Revised 1895.)

to adopt my treatment, will condemn me for awakening hopes which can never be realized by the "expectant method" of treating typhoid fever; or should they fail to secure with the antiseptic treatment, the results which I maintain are possible, they will forthwith lay all the blame to my method, rather than upon their application of it.

May I also express my gratitute to the editor of the *Journal of the American Medical Association*, for so aptly and so promptly defending me from the malicious and spiteful attacks of the editors of two or three medical journals. I also desire to say to the members of this society that I fully appreciate their courtesy, in giving up most of the time at the last meeting to my second paper on typhoid fever. And when they, by unanimous vote, gave me the floor again this evening, I could not help wishing that my work were far enough advanced to enable me to make my third paper on typhoid fever something more than a mere effort to inaugurate a new era in the diagnosis, prognosis and treatment of microbic diseases, the subject which for more than twenty years has lain nearest my heart and to which all of the best years of my life have been devoted.

I do not wish at present to enter into a strictly scientific discussion of typhoid fever. Most of the investigations into the etiology and pathology of the malady, have been done by better observers than I can ever become; and my own work in that direction is in too chaotic a state to be quoted by scientific men.

We know too little of the bacteriological world, too little of the antagonisms existing between the minute denizens and as a consequence know so little of the etiology of typhoid fever, that we cannot affirm positively that any one germ invariably produces it; and so little of the real action of the remedies which have been advised to be ad-

ministered, that we are unable to say whether the eucalyptol and guaiacol, or the creosote or calomel, or any one agent is essential, or how, or why a cure has constantly followed their exhibition.

The importance of the subject to you, to all American and Canadian physicians, and indeed to all practitioners of medicine all over the world, wherever typhoid fever prevails, cannot be overestimated, because of its terrible mortality (the death rate in Pittsburgh in 1892 was 23 per cent); because of the broken constitutions of the more than 500,000 who recover from the disease in the United States annually, because the king upon his throne, the statesman wielding the destinies of the greatest nation, the merchant with his princely wealth, and the most brilliant physician, with all their resources, and all their power, cannot escape it, and because, last but not least, aside from the principles of treatment I have given you, there is known to men no means of aborting the disease, or of saving the life of every case.

That I can do this, the reports of my cases of typhoid fever with the accompanying charts, shown you at the last meeting of this society, a few of which have been published in the *Journal of the American Medical Association*, should be conclusive evidence. They represent only the cases that I have treated since the 25th day of July, 1893, and of these only such as presented absolutely pathognomonic symptoms of typhoid fever, in nearly every one of which the diagnosis was confirmed by from one to five of the ablest diagnosticians in the country.

At least, you must accept my declaration that all cases of typhoid fever, uncomplicated by pre-existing or coexisting disease, can be so modified as to cause them to run an exceedingly mild course, until you can produce proof

that I have failed in a single instance, by the application of antiseptic remedies to do it. A bold assertion, after reading Osler's statement: "The profession was long in learning, that typhoid fever is not a disease to be treated by medicines," and "We are still without an agent, which can counteract the gradual influence of the poisons which develop in the course of acute febrile diseases, such as typhoid fever, pneumonia and diphtheria."

And yet, in 1880, in an unusually largely attended meeting of this society, twelve years before this book was published, I condemned all of the recognized methods of treatment of typhoid fever. I gave in detail my treatment and foreshadowed in some measure the important results which I expected to follow its adoption. I told the essayist of the evening, that if he would abandon his own, and all known beaten tracts of treatment, he would have better results, and he, while expressing his respect for me as a careful practitioner, condemned my theories, and the remedies I proposed, as did every other member who joined in the discussion.

In 1882, the subject of typhoid fever being under discussion in this society, I said that intestinal hæmorrhage would be unknown if the disease were properly treated, and that it would be a safe rule to send to State's prison any physician who ever had such an accident, presupposing of course that he had been called to see the patient in due season. I admitted that such a law might occasionally do injustice, but claimed that its general effect would be beneficent.

Some of you will remember, that on the 13th of November, 1884, in the discussion of the term, "typho-malarial fever," I condemned its application to cases of true typhoid fever, with no malarial taint, and took occasion to say

at the same time, that the term, "malarial fever," was misapplied, when used to designate a fever that runs three or four weeks without intermission, or distinct remissions and ends in death from intestinal hæmorrhage, or exhaustion.

You will remember, too, that again in 1890, I spoke in condemnation of the use of the coal tar derivatives, in the treatment of the disease. I said that doubtless a very large percentage of the deaths from heart failure were due to their exhibition. And again in 1890 I spoke to societies on the same subject, saying that I knew that typhoid fever could be aborted. Thus the fact that I have regarded typhoid fever as a curable disease has been no secret since 1880; it has also been well known that if I saw a patient before the sixth or eighth day of sickness I invariably gave the one prognosis, ten or twelve days' sickness, or if sick longer in so mild a way as to cause no uneasiness, no danger, and the medical profession abroad will understand that if I had failed in a single instance to make my prognosis good, both the people and the medical profession here would have held me responsible years ago for every death.

During all these years I had made every possible effort to prove the accuracy and certainty of my reasoning so that when I appeared before my society, claiming the ability to do what all of our preceptors teach and believe is impossible, I might have the means, not alone of proving my assertions, but also of defining the principles governing the proper treatment of the disease. But my dialectics were too absurd for belief, even by the most credulous. Although the authorities in some hospitals would permit me to see their patients, or make dissections, it was long an utter impossibility for me to secure an opportunity to treat even a few patients in a public institution under the observation of

a skilled diagnostician, notwithstanding the fact that my applications were supported by the highest credentials.

I have met with so many discouragements, that lack of money alone prevented me from opening a hospital for typhoid fever, in which to demonstrate to the world how to abort the disease. A few thousand dollars, placed at my disposal in 1880, would long ago have resulted in the saving of many thousands of lives, as well as the great amelioration of the condition of those other thousands who languish for weeks in a burning fever, and suffer the horrible pangs of hunger (I have felt them), and finally, as mere shadows of their former selves, emerge from their sick room, and creep about more dead than alive, often for months, when they might just as well have been sitting up and eating beefsteak, or bread and butter, after the sixth or seventh day of treatment.

A few years since, when Dr. McCurdy was president of the Ohio State Medical Society, and by virtue of his office was the highest representative of the profession of the State, we had several interviews on the subject of publishing in some medical journal my claim that "Typhoid Fever can be aborted," and the method of treatment that seemed best calculated to produce this result; and we both felt that without more conclusive evidence than I could then adduce of my ability to abort the disease, no possible good could be effected by such a publication.

Although Dr. McCurdy has done me the honor to accredit me with having made "a wonderful discovery," yet he expressed the belief that premature public announcement would greatly imperil my professional career, and I understand that he still thinks (and I am sure the opinion is correct) that even now it would have been better to have waited a few years longer before giving publicity to and circulating abroad my extraordinary and original notions.

My cases are yet too few to carry conviction to the mind of every member of the profession that it is possible to abort typhoid fever; and twelve years of active practice, without a death, is not long enough to convince every one of them that death is a wholly unnecessary consequence of the disease. Could I conscientiously have waited until I could have reported the cases of twenty years without a death from typhoid fever, as well as a proportionately increased number of aborted cases; could I have delayed until I had completed my investigations so far as to enable me to state with exactness, the laws upon which the scientific treatment of the disease depend; I might then have been able to convince a sufficient number of thinking men that my theories are correct, and to have induced them to aid me in convincing the unthinking, and the treatment of typhoid fever would have been revolutionized.

Now what will the result be? We must wait and see. How long? Who can tell? The lessons of the past must be unlearned before the lessons of the future can be understood. All of the great sophists of archaism and the pedants of to-day have so iterated and reiterated the statement that typhoid fever cannot be aborted, that it will take long to efface from the memory that one sententious precept, especially while the very best and latest manuals of medical education, as well as all of the lecturers in the universities of the world, are teaching quite the contrary; and until this misteaching has been withdrawn from that curriculum, what may we expect?

With this bitter and blighting thought on the mind, can a physician hope for triumph? Can he have a longing to be "master of the situation?" Can he be solicitous and eager to succeed with the abortive treatment of typhoid fever. Does he remember that only to the most careful

watching and the most skillful use of the remedies at our command, will this treatment yield its happiest results. How can he gain his end in such a work, when he firmly believes in the impossibility of success, or how can he be expected to give due energy to a task so herculean to accomplish, in which he had no faith?

Another bit of instruction which it will be difficult to lose sight of, and which is taught by all our mentors and guides with great unanimity, is, not to treat symptoms. Early in the disease, a patient with a temperature of 105° or 106° should be treated exactly as one with a temperature of 101° or 102°. The physician who says that the important object to be attained is to bring the temperature down, is like the man who would attempt to resuscitate a drowning man without first having taken him out of the water, and the end would probably be the same in either instance. It is not the symptom that kills the patient, and one patient with a temperature of 105° may be on the high road to recovery, while another with a temperature of 101°, or even lower, may be rapidly approaching the grave. Watch the temperature, the pulse, and all other symptoms as matters of scientific interest, and as showing the result of treatment given hours, or even days before, but not as giving any indication for treatment in the future. This rule applies only in cases which have been properly treated prior to the eighth day of disease.

In a paper read before this society last month, I gave in detail the treatment of three typical cases of typhoid fever. Two of these were treated regardless of symptoms, and the other (whom I did not see until the sixteenth day of his disease, *and for that reason*) was treated almost entirely by the symptoms. All of these cases recovered, but while one was not allowed any solid food for ten days after his

temperature was normal, the others ate solid food all the time. Two were never sponged at all, while the other was sponged thoroughly. The one was not allowed to rise even to stool, the others sat up and walked about, and one of them went out of doors during his illness. The detailed treatment of these individual cases was given, because I exhibited nearly every remedy that I regard as essential to the abortive treatment of the disease in all of its various stages, also, because at this time I did not consider myself capable of writing an analytical thesis on the general treatment and consequently I wished to give myself more time for careful observation before doing so. In future, as my investigations result in improved methods, I shall give the profession further details. I hope, also, to be able to go more fully into this part of my subject, in a paper which I propose to read at the San Francisco meeting of the American Medical Association.

Admitting that typhoid fever can be aborted, it becomes a matter of prime importance to decide *how* to abort every case and save every life. This will be impossible as long as the people buy and use patent medicines, take domestic remedies, or for any reason neglect to send for a physician in season, and they will never realize the importance of doing this, so long as the physician fails to make a diagnosis, and institute proper treatment promptly as soon as he is called.

Typhoid fever is man's most insidious enemy, having a long period of incubation, its early diagnosis becomes a matter of the greatest importance, and should invariably be made the first time the patient is seen, with sufficient accuracy to warrant the institution of proper treatment. I readily concede the impossibility of always making a correct or positive diagnosis at the first visit, but every case in

which the temperature is ever so slightly elevated, and the pulse ever so little accelerated, in which no contraindications can be discovered, should be prescribed for as a case of typhoid fever, thus giving the patient the benefit of every possible doubt, since I know of no disease or condition which under this rule would be unfavorably influenced; on the contrary, the diseases in which this course would be ideal treatment, are too many to be even mentioned in one short paper. In diphtheria, in measles, in variola, in malarial fever, in pneumonia, in influenza, and all catarrhal troubles, you have given your patient the best possible initial treatment. You will remember that I was assigned the duty of presenting a paper on "La Grippe," after its visitation amongst us in 1889, at the annual banquet of the Mahoning County Medical Society, in which I said that I accredited the fact that I had had no deaths from "la grippe," or any of its sequelæ, to the treatment I had invariably pursued. I might have added, that although I had made no mistake in diagnosis, I regarded, *for purposes of treatment*, every case of "la grippe" as a case of typhoid fever except that I usually gave the remedies in larger doses Thus, while "la grippe" and typhoid fever differ so widely that I do not think any careful physician would be likely to make a mistake in diagnosis, these diseases are best treated in almost identically the same way, at least in their earlier stages, and the same is true of all of the malarial fevers, and of the so-called "typho-malarial fever."

During my long and intimate association with my uncle, Dr. Timothy Dwight Woodbridge, to whom a niche is given in the temple of fame, whose prestige and supereminence was undoubted, so *distingue* and dignified, he had dedicated his life to the healing of men, and his posthumous glory will ever shed a luster over the place

of his nativity. We of Ohio will always remember his inexhaustable supply of intelligence and his well-stored mind, enriched by the observations and study of eighty years and more of life in this workaday world, and very nearly sixty years of active practice of medicine made him not only a pleasant companion and charming raconteur but always a wise guide and counselor in all matters relating to our profession. He has often said to me in his impressive way that there was no malarial fever in the Mahoning Valley which would ever cause a death even if left entirely without medical attendance, and yet the report of the health officer of the City of Youngstown for the past year, 1893, shows twelve deaths from malarial fever and only nine deaths from the more terrible and without question more fatal, typhoid fever. If Dr. Woodbridge, Sr., were right, and my own experience certainly sustains his boldly expressed opinions, then there are three horns, and three only, to the dilemma of the physicians who made these reports. In every one of these cases either a mistake of diagnosis was made, a false record submitted, or the medicine, and not the disease, killed these twelve patients. In this conclusion I am ably sustained by Dr. Eliot, of New Haven, who says :

"When typhoid fever really exists, but is not correctly diagnosticated, it is in this vicinity most frequently called malarial fever, and at a later stage typho-malarial fever. This mistake generally depends upon a mixture of ignorance and carelessness. I do not care to maintain, at the present time, that typho-malarial fever never occurs. I presume that every one is aware, however, that this term should be limited to cases of disease which are due to the simultaneous action of the typhoid and of the malarial poisons. I am thoroughly convinced that most cases

of so-called typho-malarial fever are in reality cases of typhoid fever. If a malarial element is present in some of them, it is possible to remove it promptly by appropriate treatment. With regard to cases of so-called malarial fever, it should be remembered, that most fevers which are caused by malarial poison, are of a distinctly intermittent or remittent type. If therefore, a case of continuous fever occurs, which is uninfluenced by adequate doses of the ordinarily used anti-periodics, there is good reason for challenging the diagnostic accuracy of any one who pronounces such a case malarial fever. In most cases of this kind the disease is enteric fever. The vital statistics of our city and State show a number of deaths as due to malarial and typho-malarial fever, which is almost equal to the mortality reported from typhoid fever. There is little doubt that the majority of these cases reported, represent mistakes in diagnosis, where enteric fever has been overlooked and called by another name."

The above quotation is perfectly applicable to this locality, except that our statistics are worse than those of New Haven. Many more inaccuracies would have been recorded, had not the mistakes of the attending physician been corrected by the consulting physician, sometimes during the third or fourth week when it had become too late for a change in the medicine to benefit the patient, and there can be no doubt if these reports could be analyzed, and autopsies made, there would be found a large number of instances in which the deaths attributed to malarial fever should have been reported under another appellation. Osler, than whom there is perhaps no better authority, says in "Principles and Practice," these cases coming on with severe headache, photophobia, delirium, twitching of the muscles, and retraction of the head, are

almost invariably regarded as cerebro-spinal meningitis; he says also that he has thrice performed autopsies on cases of this kind in which no suspicious symptom of typhoid fever had been present, and adds: "Cerebro-spinal meningitis is however a rare disease, typhoid fever a very common one, and the onset with severe nervous symptoms is by no means infrequent. Fully one-half of the cases of so-called brain fever belong to this category."

Some of you may object to my method of making a diagnosis; may say that I reach conclusions from insufficient data. But you are reminded that this is a diagnosis for treatment only, and to be verified or corrected by future observations, and at the earliest possible moment, and that it can be justified only on the premise that the physician's most important duty is to cure his patient, rather than to strive for the unattainable—an absolute accuracy of diagnosis. I am aware that an approach to an absolutely exact diagnosis in typhoid fever can be made, if the development of all the characteristic symptoms of the disease are awaited, but in this case the exact diagnosis is purchased at too high a price, and it will come too late to be salutary to the patient.

It seems strange that so varied a value should be placed by different members of the profession upon the symptoms ordinarily supposed to be pathognomonic of typhoid fever. One will pin his faith to rose spots; another to tenderness in the right iliac-fossæ; another attaches much importance to tympanitis, and dullness over the spleen; while one old physician, who actually considers himself to be something of a luminary among the shining lights of the profession, says he never saw a case of typhoid fever in which there was not diarrhœa, with little black spots through the discharges. He is on a par with those who fail in the discrimination and differentiation until their wits are awakened by the appearance

of rose spots, or the supervention of an intestinal hæmorrhage. Their diagnoses may be exact, indeed, but so far as any benefit to be derived from treatment is concerned, they might almost as well have been made in the dead house. A diagnosis of typhoid fever, based on such slight evidence as two symptoms only, and those common to many other pathologic conditions, might, and probably would, occasionally require future correction, but could never result in harm to the patient, because the remedies administered in the doses advised could by no possible means have any malific influence on any condition which could be mistaken for typhoid fever; and the treatment par excellence for any stage of this disease would be almost equally beneficial in the early stages of any acute fever. If the appearance of these characteristic symptoms are awaited, typhoid fever will rarely be aborted, and unless made by an exceedingly expert diagnostician a very large percentage of this class of patients will be sacrificed.

I hand you the chart of Case No. 51, Angus McP., which was shown with the records taken up to date, at the last meeting of this society. It was in this case that a fatal end was so confidently predicted by a physician who had examined him on the day after I first saw him. Pray observe the rapid fall of temperature after each application of large doses of eucalyptol guaiacol mixture to the abdomen.* He had two or three small hæmorrhages of the bowels.

I was called to-day to see Mrs. A. McP., who undoubtedly has typhoid fever. If so, hers will be an exceedingly interesting case, since it will be complicated from the beginning, she having had extensive pelvic trouble

*Dr. McCurdy, who saw Mr. McP. with me immediately after I was first called, during the discussion of this paper by the members of the County Society, said: "I consider this the worst case of typhoid fever I have ever seen."

since the birth of her child. Several nights ago she was called up, and stood on a cold oil-cloth, contracting a severe cold to which she accredited her violent headache and backache, cough and the agonizing pains in the region of the right nipple, and for this reason did not send for me until to-day.

I shall report her case in my next paper.

If in these preliminary papers I have convinced the medical profession that it is possible to cure typhoid fever, that in the future a death from the disease will be *prima facie* evidence of culpable ignorance, or criminal carelessness, either on the part of the patient, his friends or his medical attendant; that the long weeks of burning fever, followed by a shattered constitution, and sometimes a clouded intellect, need no longer be feared. If I have impressed upon minds the importance of making an early diagnosis and promptly acting upon it, have shown them the danger of mistaking typhoid fever for malarial fever or any of these milder diseases, and have clearly indicated that the scientific treatment of typhoid fever in its earliest stages is also the best possible treatment for any disease for which it is likely to be mistaken, then their time and mine, and the space these pages will occupy in the *Journal of the American Medical Association*, could be put to no better use.

ADDENDA—REPORT OF LATER CASES.

Case No. 60. Mrs. Angus McP., aged twenty-four years. This case was first seen on the 12th of March. On the second day of treatment the temperature was 103½° and on the fifth day it was 104½°. The abdominal symptoms yielded promptly to treatment, but the trouble of the lungs grew rapidly worse, and culminated in a profuse hæmorrhage of the right lung. The temperature on the 29th of March,

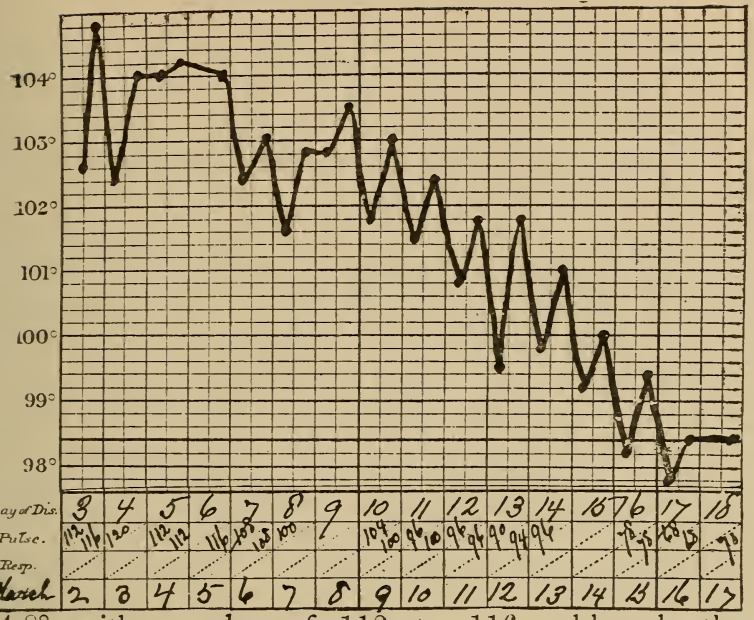
in the morning, had dropped to 97.8°, and in the evening, 99.6°; the cough still very troublesome, but otherwise the patient was quite well; had eaten a little beafsteak on the two preceding days. Thereafter her diet was left unrestricted.

A brother, sister, and sister-in-law of Angus McP., all three having aided in nursing him, have each had an attack of typhoid fever.

Case No. 63. Minnie McP. This case was first seen on the 14th of March. Although the symptoms were all characteristic, she was confined to the bed but little of the time. She was fanciful and capricious about her alimentation, and although I warned her of the impropriety of eating solid food, she persuaded a little child to bring her three small cucumber pickles, which she ate, thus causing a severe attack of indigestion, at which time her temperature went up to 104°, after having been 99⅖° the day before. However, after the backset caused by this indiscretion, her condition improved rapidly and she was soon well.

Cases Nos. 65 and 66. Frank McP. and Mrs. Hugh McP. Both of these cases presented characteristic symptoms of typhoid fever, but as I was attending other patients in the house treatment was commenced early, and neither patient was confined to bed more than a day or two.

Case No. 59. Thomas M. Was under treatment and the case partially reported in my last paper. (See case No. 55.) He continued to improve rapidly. The pulse having been on the second day of treatment 108, and the temperature 104⅖°. On the tenth day of treatment, the temperature and pulse were reduced to normal. He sat up and ate a little beefsteak, and took no medicine after February 19, the thirteenth day. For fifteen days he was apparently entirely well, except that he did not regain his strength. I saw him on the eighteenth day, when his temperature and pulse were still normal; he ate such food as he wished; walked out of doors each and every day, although he had not yet commenced to attend to his business. On the 3d of March I was recalled, and found the morning temperature was 102.6°; the afternoon temperature



104.8°, with a pulse of 112 to 116; although there were no rose spots, not much abdominal tenderness nor tympanites, it was unquestionably a relapse of true typhoid fever. He recovered more slowly than from the first attack, his temperature first touching normal on the fourteenth day of treatment. Of cases that I have seen early in the disease this is the first relapse I have ever had.

Case No. 62. Annie M., sister of Case No. 59, residing in the same house, consulted me on the 12th of March. She presented fairly well-marked symptoms of typhoid fever, except that the tenderness and pain in the right iliac fossæ seemed to justify a diagnosis of a graver disease. She had been treated during the past summer for a disease which her physician denominated inflammation of the bowels. The development of a well-marked swelling in the painful and tender right iliac fossa, prompted me to call in consultation two eminent abdominal surgeons, Dr. McCurdy and Dr. Dickson, who both expressed the opinion that she had typhoid fever complicated with some grave pelvic trouble. Her temperature touched normal on the fourteenth day, and she made an excellent recovery from the fever. The secondary disorder was also perfectly cured in time.

TYPHOID FEVER.*

I have recently published in the *Journal of the American Medical Association*, three papers under the title, "Can Typhoid Fever be Aborted." These essays were accompanied by many clinical charts, containing much important data. They represented only a portion of the cases of typhoid fever which I have treated since the 25th of June, 1893, and of those only such as presented absolutely characteristic and pathognomonic symptoms of the disease. Had I preserved complete memoranda of all of the cases which I have treated since 1876, when I first realized that the text-books on the principles and practice of medicine were unsafe guides in the treatment of this most formidable disease; since 1880, when I first undertook to introduce to my local society my novel and at that period almost untried treatment (for what are four years in the cycles of error during which typhoid fever has been regarded as an incurable malady), or even since 1882, the year when I had my last death from typhoid, malarial, or any continued fever, I would now be in a position to present to you such a multiplicity of facts in evidence, such a profusion of records, such an array of incontestable proof as to have rendered all the vicious reasoning and wrangling, all the disputatious debates, all the illogical and flimsy argumentations that have assailed me to be set at

*Read before the Buffalo Medical Club, 25th of April, 1894. Revised 1895.

naught. For the cases which I have treated have been so many and the results of the peculiar medication so remarkable that should a man from mere curiosity be tempted to thoroughly examine even these comparatively few records which are placed before the members of this society, should his mind be filled with doubt and incredulity, should he be influenced by prejudice and misjudgment, should his opinions be warped and biased by jealousy or enviousness; or should he be a man of such decision of character that this trait amounts to obstinacy, a man with the "idee fixe," or narrow-minded and hypercritical, ready to fly in the face of facts; should he be careless and superficial, of a hesitating and undemonstrative disposition, lacking in faith and hope; skeptical, suspicious; should his ignorance and illiterateness render him incapable of adjudication, no man in any condition could but be absolutely impressed and imbued with the positively convincing proof which I have to offer that typhoid fever can be aborted. I fully realize the danger of drawing conclusions from insufficient data in such a disease as that under consideration, and for that reason I again express my deep regret that I wasted so much valuable material that would have aided me in convincing you of the truth of my statements.

I am speaking well within bounds when I say that typhoid fever is far more amenable to treatment than is a large class of the milder diseases, of the curability of which there is no question. If it were in my power to communicate to all of you who sit beneath the sound of my voice to-night, the absolute confidence which I feel on approaching every case of typhoid fever (which I see at a sufficiently early date), it would give the conscien-

tious and ingenuous physician almost as much comfort and peace of mind as it would the patient.

Some two weeks since I visited two of your great hospitals, where I was received in a most cordial and gracious manner by the physicians in charge. The typhoid fever patients whom I saw had every appearance of doing as well as could be expected under the "expectant method," and although records seemed to show an exceptionally low death rate, there was not wanting most positive evidence that the disease is yet the same old enemy, so malevolent and sinister, so virulent and destructive, so lingering and protracted, which in my earlier professional career caused me so many hours of anxious anxiety and disquietude. In one of the hospitals the following remark was made, "We had two deaths last week from consolidation of the lung in the fourth week of the disease." I could with difficulty restrain myself from saying, "There should be no fourth week in typhoid fever," and as I gazed upon the weak and emaciated bodies, which showed so palpably the physical pain and discomfort through which they had passed; on the physiognomy upon which was so visibly and indelibly impressed the mental suffering, which is as excruciating as the other; when I thought of the martyrdom of the thirty-four or thirty-five periods of twenty-four hours each; of the restraint and coercion of this durance vile; when I remembered the long and weary days of watching and surveillance which needed "L' oeil du maitre" each and every instant of time, and of the strain and fatigue which the faithful and untiring nurse and body guard has had to endure, and how easily all of this might have been obviated. And again when told that the nutriment of these patients was to be nothing but milk, until the tem-

perature was normal, and after that only such alimentation would be given as was contained in broths and other liquid foods, until the temperature had continued at the normal point for two weeks, and then a little raw egg was to be administered, I thought of my patients, who after the eighth or tenth day of the treatment (should there be no intestinal lesion) are allowed to eat beefsteak and eggs, and other nutritious and sustaining, and at the same time easily assimilated food, and I pitied these starving ones, so pinched with hunger, so parched with thirst; whose voracious appetites did not need to be titillated; for their mouths were already watering for the delicate and dainty contents of the larder, and my compassion and sympathy were rendered more poignant by the recollection of my own feelings of torment and agony under the same circumstances.

Would that I could have cast a mystic spell over them or by an "open sesame" caused to appear before their saddened eyes the entrancing luxuries which should have been in store for them. The feast of plenty instead of physic, the bed of roses upon which to bask in the sunshine, instead of the weeks of invalidism spent in a sanitorium; the robust health and strength, the hale and hearty fresh lease of life, all that Hygeia should have bestowed upon them, instead of leaving them tainted and languishing and bedridden, while I was to go forth on life's pathway without the opportunity of rectifying the inconsistencies of a dogmatic age and profession.

The talisman is in my hand, the magic wand of a Chiron, which has placed before us the life and health giving elixir, the panacea for all the ills of typhoid fever. In 1876, four years before Eberth and Koch discovered

the bacillus typhosus, while attending some cases of the abortive type of typhoid fever, the oft recurring but always new and interesting query presented itself to my mind: Could not such medication be employed in every case of microbic disease, as to cause the course of the malady to be so modified that it would in no sense be dangerous to life, and from that time to the present, these noisome, polluted, infectious diseases have been my life's study. My deliberation and contemplation on the subject has been deep; I pondered long over each insignificent feature; my faculties and senses were strained to the utmost; I took counsel from every source; I cherished each idea and thought as it came to me, and my interest and thirst for knowledge on this topic was insatiable; I read each and every thesis I could come across with scrupulous care, and as I studied the treatment of typhoid fever in the most scientific publications within my reach, I hoped from the sifting and dissecting of a multiplicity of authors to be able to extract the essence of wisdom; I made my examinations with the eye of an Argus; watched each result, neglected no trifling occurrence which could in any way cause me to alter my already formed conclusions, and for all these years of solid work I received my recompense, for I was rewarded by obtaining my long sought desideratum.

If in all of the marvelously great field of medical literature there is one subject that should cause the blush of shame to tinge the cheek of every devotee at the shrine of Æsculapius, it is that veritable witch's caldron of medical writings upon the treatment of typhoid fever.

Many scores of widely divergent plans of managing the disease have been advised, recommending the use

of so varied an assortment of drugs, that from them a fairly well-equipped apothecary shop might be stocked, and should the student, instead of following his favorite author, attempt to formulate a method of his own, from an indiscriminate course of reading on the subject, he would have a difficult task indeed. I think the gentlemen who are present will agree with me when I say that many of the therapeutic agents that have been advised are harmful, and many are also dangerous; while the crowning fact remains that no single method of treating typhoid fever has yet been able to commend itself to even a respectful minority of the profession. On one point, and one only, which bears any relation to the therapy of the disease are the great thinkers and writers of medical literature united, viz.: that no treatment whatever has any curative power. Of this fact the editorial on that subject in the *Journal of the American Medical Association* of the 19th of August, 1893, in summing up the papers read at the previous meeting of the Association (quoted in full by me, in my first paper on Typhoid Fever, which was published in the journal of the 10th of February, 1894), is quite conclusive. But the redundancy of the remedies prescribed; the impossibility of reconciling the different methods advocated; the glaringly apparent inconsistency of the many theories advanced, and the fact that some of the therapeutic agents most enthusiastically put forward, actually aid the disease in its deadly work; all goes to prove that the great oracles are in this field at least mere novices. If all the theories upon the host of methods of treatment for typhoid fever with the divers claims as to the omnipotence of each by their advocates, could be gathered into one volume and published as a whole it would I fear

convict the medical profession of lunacy or worse. Let us abandon then this contradictory mass of inconsistencies. Let us recognize the fact that any treatment to be successful must seek to accomplish something more than merely to combat and overcome symptoms as they present themselves. All men of master minds have already accepted the germ theory of typhoid fever, and are further agreed that the germs generally enter the system in the water or milk, or perhaps occasionally with some articles of food; when a congenial home is found in the stomach and small intestines they form colonies, multiply by myriads, then if not destroyed or dislodged and ejected, find their way into the general circulation, and finally into nearly all of the organs and tissues of the body, producing a series of symptoms and consequences which are so well known that even to mention them would be a waste of your valuable time.

It is well recognized that not even a majority of the persons drinking water which has been the cause of an outbreak of typhoid fever are attacked by the disease, and it has been suggested that those who are not ailing do not receive into the system any of the germs. This is scarcely probable. In the imperfect state of our knowledge in this field we can but surmise. It seems to me to be far more likely that the germs enter into the system of a much larger number of individuals than are attacked by the disease; but for some reason (which I shall not attempt to discuss) they have not found an harmonious dwelling place, and hence have entered into a state of "innocuous desuetude," rather than that there were not enough of these same germs to go around. If this be true, then to prevent an attack of the disease entirely it would be only necessary to produce a like con-

dition in all stomachs. To cure the malady, however, after the germs have multiplied enough to develop sufficient typho-toxins to make their presence felt, more than this must be done. If this or any similar theory be correct, and the germ in any one case can be destroyed and the disease aborted, the logical conclusion must be accepted that at the same stage of the disease in any other case it can also always be aborted. In my boyhood the literature placed within my reach was good indeed, and I early learned to accept with a boy's implicit faith all that I read on theological subjects; and the habit remaining with me after studying medicine I accepted the teachings of her text-books with the same unquestioning faith. A morbid condition of mind from which it was exceedingly difficult to free myself, and which threw many an impediment in my way, as for instance when hope would tell me that I was aborting typhoid fever, and I would read something that would ring all of the changes of the oft reiterated statement that such a thing was absolutely impossible, I would have to whistle very hard to keep my courage up. Then after a period of doubt and uncertainty, hope would again begin to dawn, I would run across some wise author, who would encoffin hope, drive the nail home, and clinch it with a calculation, showing the weight of an average man, and the enormous quantity of the antiseptic or germicide (always of course selecting the most poisonous) it would require to thoroughly asepticize this enormous mass; and as such a great amount of so noxious an agent would be incompatible with animal life, would imagine that he had settled the question forever, forgetting to realize that the germ finds its earliest habitat in man in the alimentary canal (and perhaps in only a very small part of it), and that if

one can in the very beginning of the illness thoroughly asepticize this small portion, it is possible at once and most effectually to cure the patient. But even if the germ has spread farther, as would be shown by the enlargement of the spleen, rose spots, or other symptoms, its home and place of multiplication is *still* in the alimentary canal, and if by asepticizing this it is possible to cut off the supply train and reinforcements, the eliminants will rid the system of these germs, not so quickly of course as in the former instance, but without much danger to the life or long continued depression of the patient.

In my previous papers on typhoid fever, I have demonstrated (as far as my limited number of cases of that disease are capable of doing), that it is sometimes possible to abort the disease as late as the eighth or tenth day of sickness. At so late a stage as this, however, no matter how thoroughly the alimentary canal is relieved of the virus producing germ, the course of the malady cannot at once be interrupted, because the system is already so completely saturated with the noxa and time will be required for its elimination.

If I have not already taxed your patience too much, I should like to add a few words on the treatment of typhoid fever by referring to Case No. 67. George C., aged 10 years. You will see that I began the treatment on the 20th of March, 1894, when the temperature was 102⅘°. His recovery was rapid, and he regained all of his former vigor of constitution.*

In addition to the ordinary antiseptic treatment, toward the end of the illness I ordered two or three tonic

* The treatment of this case is cut out because it has since been much simplified and improved.

doses of quinine, and as he had from the beginning an exceedingly troublesome cough, some ipecac, Wyeth's bronchitis tablets and other expectorants were exhibited.

I regret that I have had to give the treatment of a single case of typhoid fever as I have done here, or of the three typical cases which were published in a former paper, instead of defining the laws by which I believe the curative treatment of the disease is governed. I concede the right of the medical profession to demand any knowledge that any member may possess, that can directly or indirectly benefit humanity, but I deny its right to insist that any member shall immolate himself on the altar of professional ethics by publishing half formed theories, misshapen thoughts or any ideas that are yet in embryo; for, let me assure you, I have still much to learn on the abortive treatment of typhoid fever.

I may be mistaken in my high conception of the duty of each member of the medical profession toward the human race, as well as toward his professional brethren, but I believe that if another operator can perform a laparotomy better than I can, and it is possible to procure his services, I operate and my patient dies, I am a murderer. If he can cure every case of pneumonia, and presents fairly conclusive evidence that he has not himself been deceived, and I fail to avail myself of his superior skill, and my patient dies, in the High Court, where eternal Justice rules, I will be held responsible for every life. Thus, is it not the duty of every member of the medical profession to secure the services of one who presents the evidence, which I have presented here to-night, of his ability to abort so grave a disease as typhoid fever?

Do you ask me how? There are two ways. Of course I should always be pleased to meet any member

of the Buffalo Medical Club in consultation over typhoid fever, and Youngstown is less than six hours away; but a higher duty devolves upon you, to prevail upon your citizens to expend a little of their wonderful wealth in building for me a hospital in which to treat typhoid fever by the "Woodbridge Method," stipulating that it shall be mine only so long as I can satisfy the members of this club, or some other equally learned and honorable body that I can save the life of every uncomplicated case of typhoid fever; can reduce the duration of the disease by more than one-half, and can diminish its severity in as great a degree.

May I picture the marvelous results that such a beneficent deed would bring. It would ultimately wipe out your death rate from the disease.

Instead of its victims being confined to the bed from twenty-five to thirty-five days, the average confinement would be less than five days.

Instead of being only ready to return to their usual avocations in from sixteen to twenty weeks, they would be already at work in two or three.

Instead of having to wait until the temperature was normal for a period of two weeks before they were allowed a "little *raw egg*," they would eat and enjoy beefsteak in an average of less than ten days from the beginning of treatment.

But this would not be all. Chicago, with her terrific death rate would send to you to learn the lesson, and so would Pittsburgh, Washington, St. Louis, and all other cities where the disease prevails; and Buffalo would teach the best lesson the medical profession of the world has learned for a hundred years.

TYPHOID FEVER.*

The awful mortality from typhoid fever in Chicago, in Philadelphia, in Pittsburgh, in Washington, and in many other cities, and in many rural districts throughout the United States, and the recent outbreak of the disease in St. Louis, in Buffalo, in Northern Michigan, in North Dakota, coupled with the well-known fact that this malady manifests a marked preference for the young and vigorous of both sexes, fully attest the importance of the subject. The interest of the medical profession in it is made clearly apparent by the enormous number of letters that have deluged my mail, since the publication of my first paper under the title "Can Typhoid Fever be Aborted?" These letters, coming as they do from almost every part of the United States, and some from beyond its boundaries, indicate that this interest is general and widespread, while the misunderstanding of some of the simplest problems involved, exhibited by the criticisms of some of those who have essayed the discussion of my papers, together with the contradictory theories and irreconcilable inconsistencies of the writings upon the subject, demonstrate the necessity of rewriting the entire literature of typhoid fever. But it is too early to do that—our knowledge of bacteriology is yet too new to justify us in attempting

*Read before the Ohio State Medical Society. Revised 1895. With clinical data.

to write the etiology of this disease,nor are we possessed of such nice comprehension of the action of the alexipharmics as would give special value to a thesis on its therapeutics. We know, too, too many lessons which must be unlearned before we can study it properly and well, and the favored few who have abundance of material and the best opportunity for observation in the great hospitals, seem loath to give up the false doctrines that are now so dear to their hearts.

Should they not rather keep pace with the workings of the scientists of these "fin de siecle" days—should they not attack many of the ancient legends and traditions of the mediæval era—give them an entire *bouleversement* and annihilate the grossest of these dark age errors totally and completely—and leave the minds of the rising generation of medicos free from the bias that has swerved the students of all the past ages from the truth. Because some eminent authority has said that typhoid fever cannot be aborted, it does not necessarily follow that all future ages must accept his "ipse dixit," and because we have not yet learned why certain remedies produce given effects, shall we say that deeds accomplished are deeds impossible. Until we are possessed of more exact data in regard to bacteria and their ptomaines and the actions of the alexines, abstract reasoning is apt to be misleading.

Hence I have striven to avoid the discussion of scientific problems and confined myself to the statement of facts which have been proven or are easily susceptible of proof. I believe that I shall accomplish the greatest good in the shortest time and ultimately benefit the greatest number, by first demonstrating that "typhoid

fever can be aborted" and leaving the speculative discussion of scientific questions to the future.

I have read three papers in my local society of late, and in each I gave a short narrative of my work in relation to the abortive treatment of typhoid fever up to the date at which it was presented. I also offered for inspection clinical charts of all of those cases which showed pathognomic symptoms of the disease which were treated by the so-called antiseptic method since June of that year. I exhibited these charts. I made my statement that I had had no death for twelve years from typhoid, malarial, or any continued fever, and I made my claim that typhoid fever can be aborted and that it should never cause a death. My paper was discussed in the society, my charts were verified and my clinical data were endorsed by those physicians who had seen the cases with me. Very soon after the reading of the last of the series I was invited to read a short article on typhoid fever in a society whose individual members were men of high repute and great renown, whose status in the medical world was unsurpassed, most of whom were personally strangers to me, however. During the discussion of my paper my clinical charts were senselessly and ruthlessly criticised by a gentleman of undoubted ability, a choice master spirit of the world, and he spoke honestly when he said, "I have examined every one of them carefully, and with four or five possible exceptions, there is not a 'typhoid fever curve' among them."

Gentlemen, you are requested to examine these clinical charts, and in the meanwhile I will make this explanation, which ought to have been given in the society of which I speak. There are among them three or four

charts which represent cases in which absolutely pathognomic symptoms of typhoid fever were not observed. They were placed in the collection because these cases appeared among others of a severe type accompanied by many fatalities. They were diagnosticated as typhoid fever and the presumption is that had they not been seen early, and promptly and properly treated, they would sooner or later have developed characteristic symptoms of the disease. Many of these patients were examined by members of this society who confirmed my diagnosis, watched the treatment, and who are ready to verify its results, every one of whom is the peer of the gentleman who criticised the charts, and quite as competent as he to make an exact diagnosis in typhoid fever, and when he said: "Not all the State of Ohio could convince me that these are the charts of cases of typhoid fever," "or that the temperature of a typhoid fever patient could be brought to normal in so short a time," he simply exposed his ignorance of the possibilities of antiseptic medicine, and placed himself on record on the wrong side of the question, and his oracular assertions should never have been made in the society.

You are asked to examine them, and to accept them as typhoid fever charts, upon my diagnosis, with the verification of these gentlemen and to study the "temperature curve" as a "typhoid fever curve" modified by treatment. Had the curves which are drafted on these charts been so traced that they would have pleased my critics, they would lacked much of pleasing me, and had I been unable to modify the curve, and duplicate the modification in almost every instance, no possible reason would have existed for the presentation of these charts,

or indeed for my appearance before this distinguished audience.

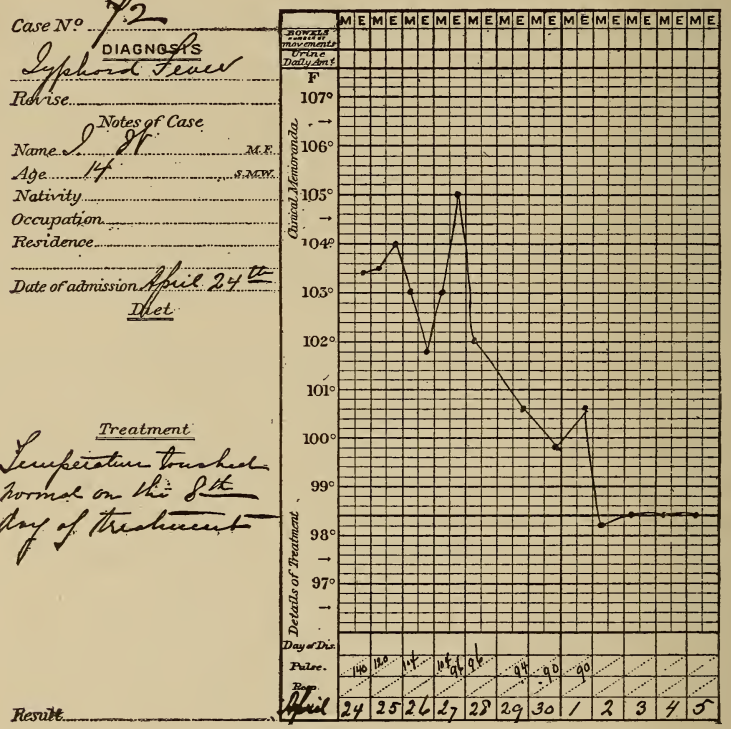
An analysis of these cases of typhoid fever will show that many of them were put under treatment on the sixth, seventh, or eighth day of sickness, and two or three on the tenth day or later; but a demonstration of the possibility of aborting typhoid fever as late as the eighth or tenth day of sickness must not be regarded as a claim that this disease can always be aborted at so late a date; or as a justification of the dense ignorance, or criminal carelessness, or both, which are so often responsible for incorrect or inexact diagnoses. Nothing can justify the correction of a diagnosis of malarial fever, or any other disease, to typhoid fever; still less the allegation that any disease has "run into typhoid fever."

In order to make an authentic and precise estimate of the value of my results, you will please bear in mind that nearly everything that the profession has regarded as essential to recovery from typhoid fever has been ignored. Very few of my private patients have had the advantage of the heedful care and watchfulness of trained nurses. No bathing or sponging has been ordered in ordinary cases, except in the case of very young children, when the temperature has remained very high for several days, and in such an instance, as in the case where I first saw the patient on the sixteenth day of sickness. In many cases no restrictions were given as to exercise, my patients were allowed to sit up, walk about, and even go out of doors, if they felt able to do so, and many of them have eaten solid food on the seventh or eighth day after treatment was begun.

I am fast coming to the conclusion that no restric-

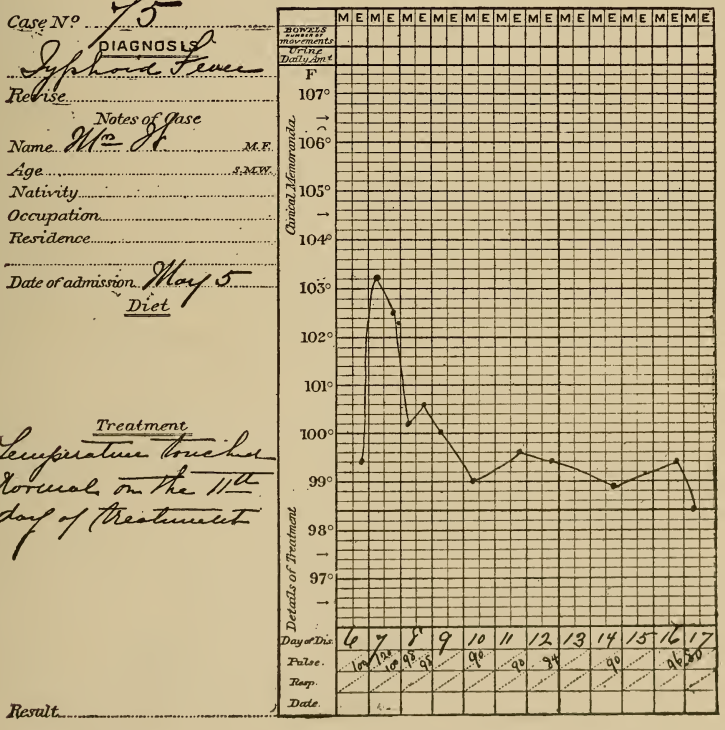
tions whatever as to diet are necessary, when the patients are properly treated from the beginning of the malady, for with antiseptic treatment one never finds serious abdominal lesions.

With my last paper, read on the twenty-fifth of April, 1894, I presented charts of cases of typhoid fever



treated by my method up to that date, including that of case No. 71, whom I discharged as convalescent on that day, since which time I have had but two cases which developed absolutely pathognomonic symptoms of typhoid fever. These patients were the wife and son of Mr. W. W., residing in the adjoining county of Trum-

bull, and I consider that they were of singular interest because I had two other patients who presented tolerably well-marked symptoms of the disease, in the houses on two sides of his residence, but whose recuperation was so rapid and decidedly satisfactory in all respects and because Mr. W. had previously lost a son and daughter from the disease.



Case No. 72. James W., aged fourteen years. This case presented all of the most characteristic symptoms of typhoid fever. Intense headache, tympanitis, tenderness and gurgling in right iliac fossa, rose spots, bronchial catarrh, nose bleed and delirium. I saw the boy first on the twenty-fourth of April, when the tem-

perature was 103⅖°. On the second day of treatment it was reduced to 101⅘°, but on the fourth day it went up to 105°, from which time it rapidly went to normal on the eighth day of treatment.

Case No. 75. Mrs. William W., mother of Case No. 72, James W. During the last few days of her son's illness this patient complained of fatigue and weariness, but being a remarkably energetic woman and self-sacrificing mother, she nursed her son until he was able to sit up each day and then consulted me about herself. I found the same characteristic symptoms as were present in the case of her son, except that there was no nose bleed or delirium. To this case I ordered to be given, in addition to the usual antiseptic medicine, a few doses of magnesia, a little ipecac, and as she had not slept for four or five nights her husband gave her a twenty drop dose of tincture of opium. Her temperature after the first four days did not run high, but did not touch normal till the eleventh day.

Cases Nos. 73 and 77. Pearl H. and Michael M., aged respectively eleven years and seventy years. These patients lived in houses on two sides of Cases Nos. 72 and 75, and presented tolerably well-marked symptoms of the disease, the temperature touching normal on the seventh day in each case.*

I regret that I am as yet unable to give any rule or regulation by which one may know when the desideratum of my treatment has been attained. I am in the habit of watching the symptoms very diligently, but carefully, and when satisfied that the patient is steadily improving, I diminish the size of the doses, or discontinue the medicine. I strive by extreme vigilance to make amends for what I lack in knowledge.

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*The treatment and the directions for the management of the disease in Cases Nos. 72 and 73 which was published with this paper originally, is cut out, because the formulas have been changed, and somewhat simplified, and all these directions are now given under the heading "Treatment" in this book.

There is no language strong enough to condemn the custom of making a composite diagnosis, as is habitually practiced in many localities. It is not at all an uncommon occurrence for practitioners to say that a patient has malarial fever, and a few days later, on the change of some symptom, to correct that diagnosis to typho-malarial fever, and at last when the patient has had hæmorrhage from the bowels or is dying of exhaustion, to state that the disease has "run into typoid fever." This course is justly condemned by Dr. Gustavus Eliot, of New Haven; and equally reprehensible is the custom of those physicians who await the development of one or more of the pathognomonic symptoms of the disease, such as enlargement of the spleen, rose spots, etc., before venturing an opinion as to the real disease, or beginning the proper antiseptic medication. Since the method of treatment I have advised in typoid fever is the most desirable and useful course to pursue in any malady for which it could be mistaken, and since the patient who has been put under this treatment early in the course of the disease need not go to bed or in any great degree be restricted or restrained in diet; debarred from social enjoyment; or even be required to neglect or omit his attendance upon his business; I should recommend that every doubtful illness of this sort be treated as a case of typhoid fever.

If future developments demand an alteration of this diagnosis and method of treatment the patient will already have been benefited by the medicine given under the mistake, but if the diagnosis should prove to have been correctly made, his life will have been saved.

I have been very severely criticised by some eminent authorities for having made such "exaggerated (?) as-

severations," considering the comparatively little experience I have had in the treatment of typhoid fever, the one declaring to be premature that which the other condemned as inexcusable procrastination, and in this connection, while one of my papers was under discussion in my local society, several months ago, one member said: "I think Dr. Woodbridge is responsible for a great many deaths, as he did not publish an account of this treatment, which is capable of producing such decidedly remarkable results, twelve years ago." To this I rejoined: "The gentleman should recall to his remembrance the fact that I gave my ideas of the treatment of typhoid fever to the members of this society more than twelve years ago. The audience of physicians present at the meeing was very large, the gentleman himself being one of the number. Can he have forgotten that every member who took part in the debate most heartily condemned my theories? No. The responsibility for the many deaths from typhoid fever must not be charged to me.

All the leaders of thought in the medical profession are an unit in teaching that typhoid fever cannot be aborted. They have a perfect right to their opinion and as far as modern teachings are concerned they are probably correct.

Mr. President, I speak thus plainly, because of the persistent efforts of two or three "captious critics" to embarrass my work and because I wish to place the responsibility exactly where it belongs.

I want it to be fully understood that I am ready to go wherever in the whole world typhoid fever claims a victim, take charge of and treat the sick ones and if I have a death from the disease I challenge the publica-

tion of my failure in a single instance to do with antiseptic medicine, the wonders which I declare are possible. The day of the disease on which I first began to treat the patient should also be noted as a most important factor in the measurement of the value of my discovery of the abortive treatment of typhoid fever.

The importance of this subject cannot be overestimated. Should cholera, or smallpox, cause a few hundred deaths, the people would be up in arms against its insufficient health boards, and yet, according to Dr. Victor C. Vaughan, than whom there is no better authority, who says in an article published in the current issue of the *Pharmaceutical Era:* "About 50,000 people die annually in the United States from typhoid fever, and more than ten times that number are sick with this disease." A fearful and unnecessary sacrifice of life, and health, and strength when the disease can invariably be aborted and every patient saved. He says further: "We have no foreign foe who could possibly inflict upon us the injury, suffering and death which typhoid fever will cause during the next twelve months."

Were this country threatened with an invasion of an enemy capable of destroying the lives of 50,000 of her people, and prostrating half a million more, for even the average duration of an attack of typhoid fever, treated by the symptomatic method; and were a military man to present the evidence of his ability to defeat that foe that I have given you of my ability to save the country the awful suffering and tremendous loss of life and time caused by typhoid fever, the entire resources of the nation would be placed at his disposal, and now I ask you, does not the country owe me one typhoid fever hospital in which I may endeavor to alleviate a

little more suffering, and save a few more lives than it would be possible to do in the private practice of medicine. In this hospital I could demonstrate to the profession that typhoid fever is really amenable to curative treatment. If the medical profession and the people can be made to recognize this disease by its earliest symptoms, and will send its victims to me, as soon as they make their appearance, I make you this solemn promise, that I will return to them every one of these unfortunates, without a death from typhoid fever, or its ordinary complications, or sequelæ, with much less than one-half of the usual loss of time from the sickness, and with little or no impairment of the constitution.

TYPHOID FEVER.*

It was originally my intention to have made in this paper an effort to discuss, from the scientist's standpoint, the etiology and treatment of typhoid fever, but the positive expressions made, within the past few weeks, of the opinions of many of the greatest thinkers of the age, that typhoid fever cannot be aborted, and in fact that the internal exhibition of drugs can have no curative effect, warns me that I have essayed enough and that this paper had better be devoted to strengthening the evidence that the claims already made are valid, and that I should avoid, as much as possible, the enlarging of the territory which I have to defend, alone and unaided, by even one of my confreres or collaborators and co-helpers in the work which I have undertaken.

I feel that I do not owe this section any apology for this change in my plan, because typhoid fever is a disease of supreme importance to the medical profession; because of its wide distribution, its long duration, its high mortality and because much dreaded as the disease now is, it is rapidly on the increase.

A disease whose geographical distribution is limited by no boundary lines, whose germs may live indefinitely in the icebergs of the frozen north, and thrive in the

*Revised 1895. Read in the Section on Practice of Medicine, at the Forty-fifth Annual Meeting of the American Medical Association, held at San Francisco, June 5-8, 1894.

torrid heat of the equator, cannot be accorded too much attention by this association, especially as the medical literature of our day is in such a chaotic state as to be exceedingly confusing to those who place any trust in it. A literature which is not at all creditable to the medical profession as long as its recommendations for the treatment of typhoid fever form such a medley of contradictions, from "armed expectancy" to the most heroic exhibition of the most dangerous therapeutic agents; from corrosive sublimate to the coal tar derivatives, almost every known poison meets with the approbation of some supporter or adherent. These various remedies and methods of treatment have most enthusiastic devotees, until finally, the materia medica having been taxed to the limit of endurance, a new class of enthusiasts has arisen, and now the bath tub and sponge, and the cold pack have their advocates who can see nothing but dire disaster in the use of any therapeutic agent except cold water. The most amusing were it not the most tragical publication that has ever issued from any press, is the Johns Hopkins Hospital Report, Vol. IV., No. 1, on "Typhoid Fever," which I have just received, in which the learned "Osler, the clinical oracle of three great cities," Professor of the Principles and Practice of Medicine of the Johns Hopkins University, asserts, and I quote him literally: "Since typhoid fever like a majority of the specific infections runs a course uninfluenced by any known medicines, the duty of the physician is to see that the patient is properly nursed and fed and that dangerous symptoms, should they arise, are combated by appropriate remedies." "In hygienic and dietetic measures his activity is incessant; so far as drugs are concerned his attitude is best expressed in the term

'armed expectancy,' giving no medicine simply because the patient has a fever; nursing and diet are the supports in which we trust, the essentials under all circumstances, to which is added the cold bath when possible, or cold sponging for the antipyretic action and stimulating effect." "Medicines are not as a rule indicated." "No known drug shortens by a day the course of the fever." "No method of specific treatment or of antisepsis of the bowel has yet passed beyond the stage of primary laudation."

During the past twelve months I have written papers under the title "Can Typhoid Fever be Aborted?" for the Mississippii Valley Medical Association, the Mahoning County and the Ohio State Medical Societies, and for the Buffalo Medical Club, in each of which I presented such determinate and categorical evidence that typhoid fever can be aborted, that had it been offered to the men of any other profession save that, which in America's most cultured city, failed to recognize the discoverer of ether until he had lain for a generation in an unhonored grave, leaving his widow long in poverty and I fear, even in want; and which in the most enlightened capitol of the old World, made the life of the discoverer of vaccination immeasurably burdensome, would have been accepted as absolutely conclusive testimony or proof that my narrations of my success are true, and of unerring certitude—nothing dubious or at random about them—all fair, square and above board, and each and every statement "as sure as fate." And any other coterie of men would have accepted my harbinger of the dawn of a happier day with a glad heart and would have heralded joyously the good tidings to the sufferers from typhoid fever, but my "conservative profession,"

with the immutableness of the laws of the Medes and Persians to govern and guide them—the conservative canons and codes which have been the standbys of their forefathers for several generations, must needs tarry awhile before permitting a transformation of their ideas. It has always done so. It has ever accepted newly evolved scientific facts with caution and deliberation. The man of investigative turn of mind must have figures and facts to guide him. The man of his own mind must be approached gently and warily that he may not become precipitately prejudiced and by his hastily formed judgment or his bigotry or illiberalness estop or dishearten a more progressive man in his philanthropic work.

Again the credulous man owes to his patients and to himself that he adopts cautiously neoterical ideas. This profession, however, is "slow and sure" and when it is once thoroughly convinced that it has within its grasp the true "Catholicon," it will apply it with no niggard hand. Those who compose it are moderate, and judicious, with gumption and esprit in abundance, their wisdom and good plain common sense indicates an enlightenment of mind and largeness of heart which conforms admirably with the magnanimousness of the work of human kindness which they have undertaken. They belong to the profession that the late venerable Dr. Oliver Wendell Holmes alluded to when referring to a charge that in his writings he drew all his villains from the clerical and legal professions, said: "I am afraid I shall have to square accounts by writing one more story, with a physician figuring in it. I have long been looking in vain for such a one to serve as a model. I thought I had found a very excellent villain at one time, but it

turned out that he was no physician at all, only a—I mean not what we consider a practitioner of medicine. I will venture to propose a sentiment which, as I am not a working physician, need not include the proposer in its eulogy. The medical profession, so full of good people that its own story tellers have to go outside of it to find their villains."

When I read my paper before the Buffalo Medical Club, I was very careful to say nothing that could give offense; unless umbrage were taken at the bare announcement that "Typhoid fever can be aborted," and yet my paper was most courteously, and I must say severely criticised, by every member of the club who took the trouble to speak, save the President who said: "The medical profession has always been very conservative, and has sometimes made itself ridiculous by rejecting new ideas that were afterward found to be true."

The criticism of my paper which was read before the Ohio State Medical Society was highly gratifying to me. The discussion was opened by Dr. Collamore, who spoke in his happiest vein. The general tenor of the remarks were in favor of giving humane and progressive ideas a warm welcome and a fair trial. There was present but one member of the Mahoning County Medical Society from Youngstown, Dr. J. E. Cone, who said: "Being from Dr. Woodbridge's town and society, I wish to state that we have had several 'fights' on this subject, and we have been watching his cases for several years to see if he could make his pledges good, but so far we have been unable to discover that he has made any failure or has had a death from typhoid fever. And we intend to continue watching his cases in the future, and if he have a death we will report it." A little speech which read be-

tween the lines speaks volumes. Professor Murphy however spoke eloquently in adverse criticism, saying in substance, that there could be no curative treatment for typhoid fever, and that he doubted the correctness of the diagnosis and observation of any physician who asserted that he was able to abort the disease. He said I shocked him when he heard that I allowed my patients to sit up, walk about, and even eat solid food; that in his day and generation the pathology of medicine had been upset twice and was now undergoing its third change, and he added: "All that is old is not false, and all that is new is not true. I would beg my friend to be a little guarded in saying that he has cured so many cases of typhoid fever with this treatment." I shall not attempt to quote Dr. Murphy's words any farther, or essay the hopeless task of reproducing in the manner justly its due, or even describing his eloquent speech, but as I sat spellbound listening with admiration to his brilliant oratory, I could not help wishing that he could see the subject as I see it, and that he were speaking for, instead of against the right. At a later period he said: "Our dispute may be narrowed down to a very small circle. Either your theory that typhoid fever can be aborted is erroneous or all the teachings of pathology are false." To which I answered: "My theory is correct and the pathology that cannot conform to it must fall."

If the theory that typhoid fever is caused by a germ, be accepted, its corollary must also be accepted, that is, that the germ can be destroyed, and if in one receptacle or the alimentary canal of one patient, then as a legitimate sequence it can be destroyed in every receptacle. If the physician who accepts this theory is enabled to see

his patient sufficiently early in the course of the disease, and treats every suspicious case on the first appearance of suspicious symptoms, he will rarely see a case of typhoid fever and never a death from the disease. It must require the possession of overmuch temerity and audaucity to enable a man, however learned and omniscient, in exalting his individual opinion above the evidence of the experience and enlightenment of years of study and investigation of the subject in question. One must be quite *au courant* in every respect and degree with the whole battle ground before one should impugn the calculations and inductions of the investigator. The sciolist and the tyro should hestitate before placing himself in the pathway of intelligent research and progress. They suggest nothing, offer no new idea, give no word of hope, simply deny that that which has already been accomplished, is possible. Had they anything better to offer, each opinion should be carefully weighed, but when they oracularly assert that a course of treatment which they have never tried, or of which they have no knowledge, cannot abort typhoid fever, they are making records of which they may in the near future be ashamed, and when those whose education and achievements in the world of science have raised them to exalted positions amongst the members of their profession repeat those oracular assertions they are simply lending their learning and the weight of their famous and illustrious names to aid in retarding the coming of the day when typhoid fever shall cease to be at once the stigma and the despair of medicine.

Since the unaided efforts of one man, however faithfully and indefatigably he may pursue his investigations, must be long indeed in accumulating sufficient data upon

which to base a scientific discussion of a given subject, and longer in giving such expression to a finished work as to command the attention and confidence of the great body of a profession which is peculiarly prone to look on anything new with much suspicion—in whose ranks are men of every grade and degree of intellect and education; men of the quickest and of the dullest comprehension; men whose minds are treasure houses of pantology; and men who cannot differentiate between the temperature "curves of typhoid and of malarial fever" or realize that there is anything worth knowing that their own feeble faculties have not already mastered.

I therefore appeal to every member of the American Medical Association, and to every physician who treats a case of typhoid fever to second me in the accumulation of such data as shall lead us to a better knowledge of the etiology and the true pathology of typhoid fever and especially of the action of antiseptics in its treatment. For this purpose, and because I have been unable to find a clinical chart so arranged as to make the collection of the necessary facts practicable and easy, I have devised one that will enable the busy practitioner to make his records valuable, with the least possible loss of time.

In conclusion, I wish to call the attention of the medical profession quite briefly to the antiseptic treatment of typhoid fever according to the method I have advocated. This has already been published in the *Journal of the American Medical Association* and in The Transactions of the Ohio State Medical Society. I hope to be able, when I have had larger experience to secure equally good results with simplified prescriptions, from which I have eliminated some of the ingredients which

give the formula such a complex and unscientific appearance. No pretense is made that this is the only preparation which will cure or abort typhoid fever, nor that any or all of its component parts are necessarily essential—but thus far it has not failed me, and crude and unfinished as the mixture seems I know of nothing better.

No one must say that he has tried my method of treating typhoid fever and failed, who has not exhibited these identical mixtures, alternated as I have directed; nor must he interject any other remedy calculated to interfere with their effect.

As the mixture is perfectly harmless, it may be exhibited in almost unlimited quantities. I always advise beginning the treatment with very minute doses and thus avoid too early catharsis.

As I have already stated, and with all my heart, in a former paper, I am ready to go wherever in the wide world typhoid fever claims a victim, whether it be across the continent or over the ocean, and I challenge the publication of any failure on my part to do all that I assert to be possible in the treatment of typhoid fever.

FURTHER REPORTS ON THE ABORTIVE TREATMENT OF TYPHOID FEVER.*

When I accepted an invitation to present a paper at the last meeting of the Mississippi Valley Medical Association, I selected for the title of my essay the question, "Can Typhoid Fever Be Aborted?" and answered it in the affirmative, thus antagonizing the teachings of the most learned professors in every medical college in the civilized world; I knew that I should be severely criticised and that all of my friends and enemies would sit in judgment upon me and after much arbitration would bring in a verdict, pro or con, and this verdict would depend upon how conclusive the evidence might be that my views on the subject were correct. I fully realized, to use the words of a distinguished littérateur, that I might expect "to stand and sit and sleep on pin points for years to come."

Nothing, save the feeling that it was my bounden duty to prove my allegiance to my ungenerous profession by sharing with it the guerdon I had won as a reward for my life's work, and the wish that they might assist me in removing the moral responsibility it now bears upon its shoulders for every life sacrificed to typhoid fever, could have tempted me to take upon myself so ponderous a burden.

*Read before the Mississippi Valley Medical Association at Hot Springs, Arkansas. Revised 1895.

I look backward over the twelve years of my experience with antiseptic medicine without a death from typhoid, malarial, or any continued fever, to a preceding series of twelve years during which time I had a death rate of about 17 per cent from typhoid fever alone; and from the present time, when my confreres are having no better results than I formerly had.

On the seventeenth of July, 1893, I gave in my local society the names and residences of twenty-one patients (all of whom were familiar to the members) whose symptoms indicated and whom I had treated as cases of typhoid fever, by my antiseptic method, during the preceding years, selecting them from the large number of whom I had seen, as especially interesting because of some peculiar circumstance or characteristic ; and I called the attention of my auditors to them because they were all diagnosticated and the disease verified by well-known and reputable physicians as typical cases of the disease, but of which I had unfortunately kept no particular records and therefore had few items to present of the cases. However, on the twenty-fifth of June, 1893, I instituted a series of clinical charts, numbering the first 22, and presented at the last meeting of this society the charts of twenty cases of antiseptically treated typhoid fever, to show the modification of the "temperature curve" by treatment.

I deem it my duty as a conscientious physician, desiring only the welfare of mankind and the advancement of my profession to continue tabulating the reports of cases of typhoid fever falling under my observation. The many grateful letters and kindly words of encouragement I have received from my confreres, and in certain instances from the patients themselves, more than

offset the intolerant phrases and unkindly criticisms which I have met with from others, who have not been so choice of their use of language. I have no feeling of unfriendliness for these persons, because I know that "truth being eternal will prevail," and that my critics of to-day will themselves eventually practice the antiseptic abortive treatment of typhoid fever, and in so doing will vindicate me in the position which I have been obliged to assume, as a logical sequence of the facts I have observed during the twenty-five or thirty long years of a life devoted to the practice of medicine. I hope, however, by going annually before some great medical body to report the cases in which the fever has been aborted and to exhibit the clinical temperature charts of all cases treated during the intervening periods, premising that when I see the cases at a reasonably early stage of the disease I shall have no death to mar my record, that I may ultimately prove beyond the possibility of a doubt that I am not teaching the world to expect or demand more of my profession than it should do. Few of you realize the anxiety which fills one's mind when one stands before the tribunal of a representative body like this Mississippi Valley Medical Association, nerved and fortified to make one's utmost endeavor to extirpate and annihilate the sophistries that all the great teachers in this most learned of the professions, whose highest aim should be to mitigate human suffering and to save human life, have promulgated. This blind leading of the blind which in the one disease under consideration, costs more than 50,000 lives each year and unnumbered years of miserable physical torment and mental infelicity to humanity.

Since the last meeting of the Mississippi Valley Med-

ical Association in Indianapolis in October, 1893, I have treated alone, or in consultation, fifty-four cases of typhoid fever without a death and with an average duration of about twelve days' treatment.

I had also a case of pneumo-typhus which made a most perfect recovery in the end, but was long in doing so. Three cases of typhoid fever sent by other physicians at late stages of the disease were also treated, one was first seen on the sixteenth day of the disease. I was called in consultation to see one case on the thirty-fourth day of sickness, when no treatment was needed; and at another time to see a patient at a somewhat earlier period of the disease, but found him dying of exhaustion, when no treatment was possible. In the Section of General Medicine at the meeting of the American Medical Association in San Francisco, in June last, I reported my cases of typhoid fever up to and including case No. 75.

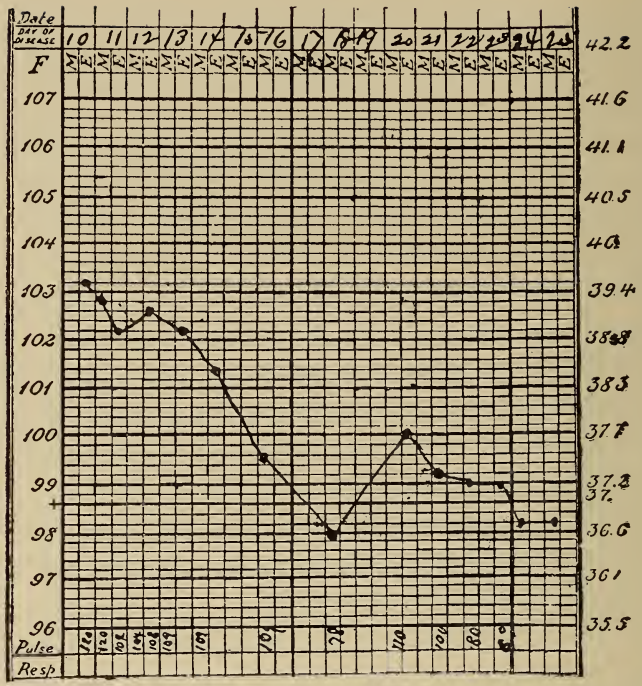
Case No. 76. Grace J. W., aged ten years, pneumo-typhus.

This case was in a desperate condition when I was called. She had been ill for ten days; was coughing incessantly, raving wildly, and having a profuse hæmorrhage of the lungs; her pulse was 160; her temperature 106.4°. She was treated as a simple case of typhoid fever, with the necessary additions in the later stage of the disease to meet the lung complication. She made a good though not rapid recovery, as you will see. She lost all of her hair.

Case No. 77. Michael M., aged seventy years. Reported in a former paper.

Case No. 78. John J., aged six years.

This boy was treated until the tenth day of sickness by the family physician, under a first diagnosis of malarial fever, and when this was changed to typhoid fever, I was



CASE 78.—Typhoid fever; name, J. J.; age, 6 years; residence, Darrow street; date of admission, July 26, 1894. Result, temperature normal on the ninth day.

sent for. Dr. M. V. Cunningham, who had seen some practice in Chicago, expressed a desire to see my work, so I invited him to accompany me on my first visit. I asked him to examine the patient and make a diagnosis. He did so, remarking that he considered it a typical case of typhoid fever. Fearing his remark might frighten the boy's mother, who was a stranger to me, I said, "Madame, you need not be alarmed, there is no danger from typhoid fever if it be properly treated." To this she replied, "I have seen several of your cases, and know they all do well." The temperature touched normal on the eighth day of treatment, but went up a trifle afterward.

Case No. 79. Mary S., aged twenty years.

This was the case of an exceedingly delicate anæmic girl. The temperature did not run high, and she was not confined to the bed all of the time. The symptoms were not well marked.

Case No. 80. Levi B., aged twenty-one.

This patient was far from well for eight days, and was found on July 31, lying in the straw in the stable, too sick to make his wants known. After four days he used a hammock hung under a tree to lie in during the day. On the ninth day of treatment he left for his home in the west, fully supplied with all the medicine he might need. I heard from him in about a week, and he said he reached his destination in safety and with little trouble. He had nose bleed and much tympanitis, and other well-marked symptoms.

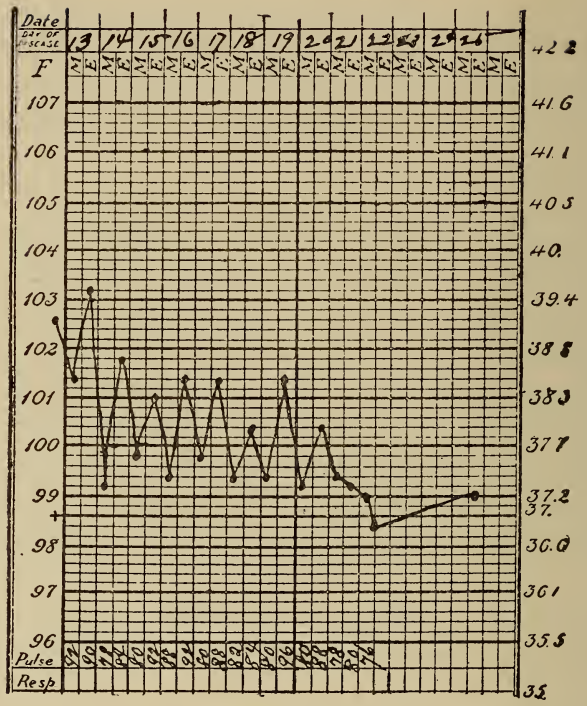
Case No. 81. Patay H., aged seven years.

This child was brought to my house each day by his mother (he lived but a short distance away). The symptoms were all well marked, and rose spots abundant.

Case No. 82. Ezra M., aged twenty-six years. American farmer.

This patient was sent to the hospital from the adjoining County of Trumbull, by Dr. T. H. Stewart, of Church Hill. I commenced treatment on the 31st of August, one day before he was removed from his home, nine miles distant, in the ambulance. On this day, the symptoms becoming grave, Dr. Stewart feared to continue the treatment without the assistance of a trained nurse, an expense which the family could not afford, hence he was turned over to me on the tenth day of his sickness.

I found the bowels very tympanitic; tenderness in the right iliac fossa; rose spots abundant; tongue coated, with



CASE NO. 82.

margins red. He was in the hospital ten days. I saw him one week later when he drove to my office, and returned to his home again on the same day, a distance of eighteen miles, Dr. Stewart having had charge of him in the interval.

Case No. 83. Walter K., aged twenty years.

The diagnosis of this case was made by one of the best practitioners in Ohio, who called me in consultation, and together we treated the patient until he made a good recovery.

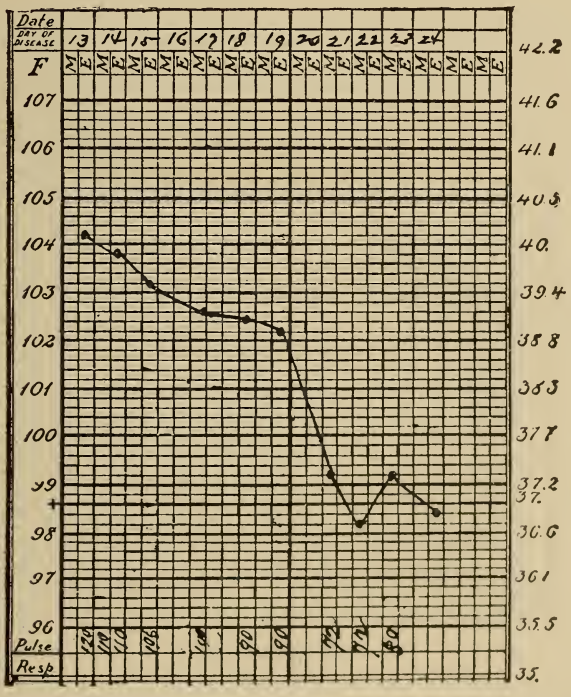
Case No. 84. Mrs. Ett. S. S.

This patient had been confined just two months before, and had not been in very robust health. The temperature

on the 12th of September was 105°, from which point it gradually descended to normal on the ninth day of treatment.

Case No. 85. Carl S., aged ten years. (Nephew of Case No. 84.)

This boy lived in a neighborhood where there were several cases of typhoid fever. Was not confined to the bed all of any day, and although presenting well-marked

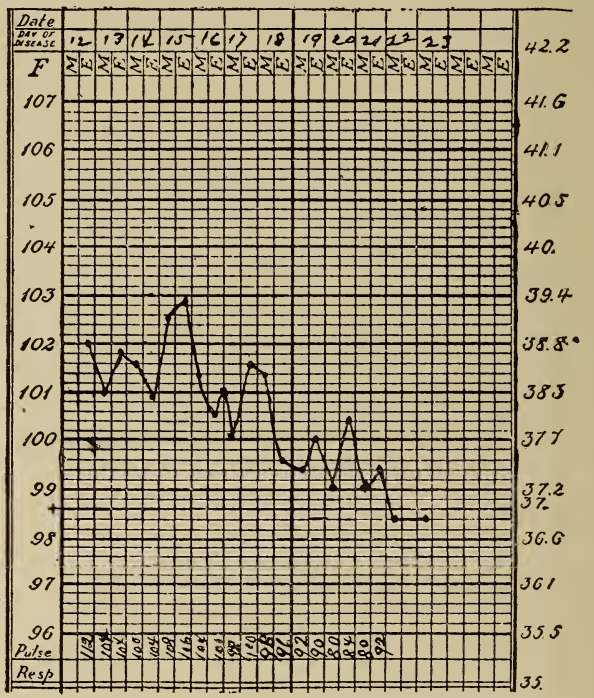


CASE NO. 85.

symptoms of the disease, rode several times on his pony to my office to see me. The temperature on the 13th of September was 104.2°, and touched normal on the tenth day of treatment. The symptoms were all characteristic; headache very severe for several days before I saw him, epistaxis, bowels tender and tympanitic.

Case No. 86. Nellie H., aged seventeen years.

This patient was taken sick at the home of her parents, but the physician recognizing the gravity of her condition, had her removed to her sister's house, which was in a healthier locality, and had her put to bed down stairs, saying that she would be sick several weeks. He treated her

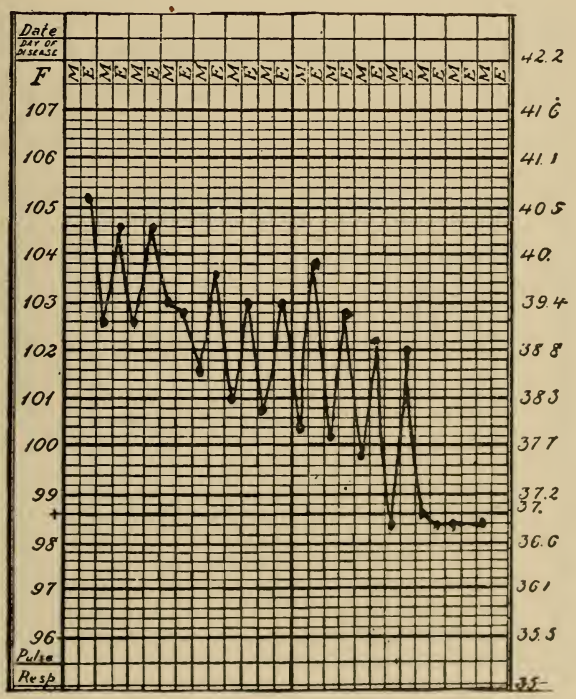


CASE NO. 86.

till the twelfth day of sickness, prescribing corrosive sublimate and one of the coal tar derivatives; enjoined perfect rest; milk diet.

I was called on the twelfth day, found a typical case of typhoid fever, and being unaware of the doctor's prognosis, I told the family that she would probably be better in four

or five days, and sitting up in ten days. Rose spots were abundant and other symptoms were characteristic. The temperature on the fourth day of treatment was 103°, and eight days after it had gone to normal. One week later she developed a phlebitis, which greatly prolonged the sickness.

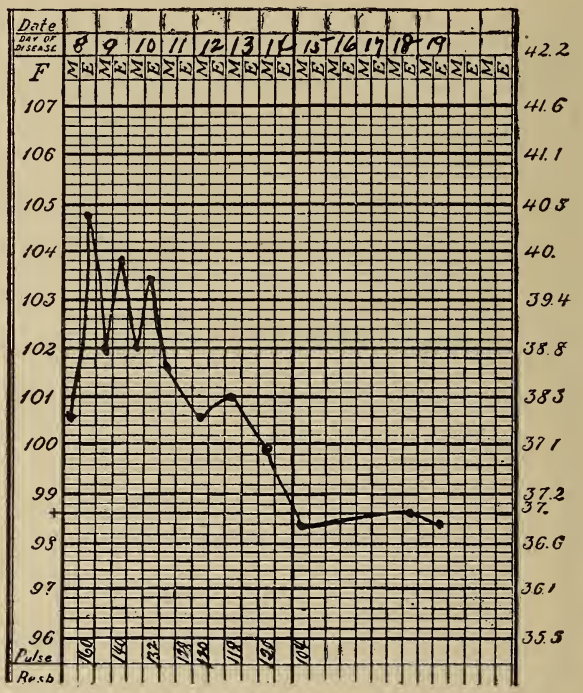


CASE NO. 87.

The physician who called me in consultation to see Case No. 83 was himself called to see Case No. 87. Olleson M.

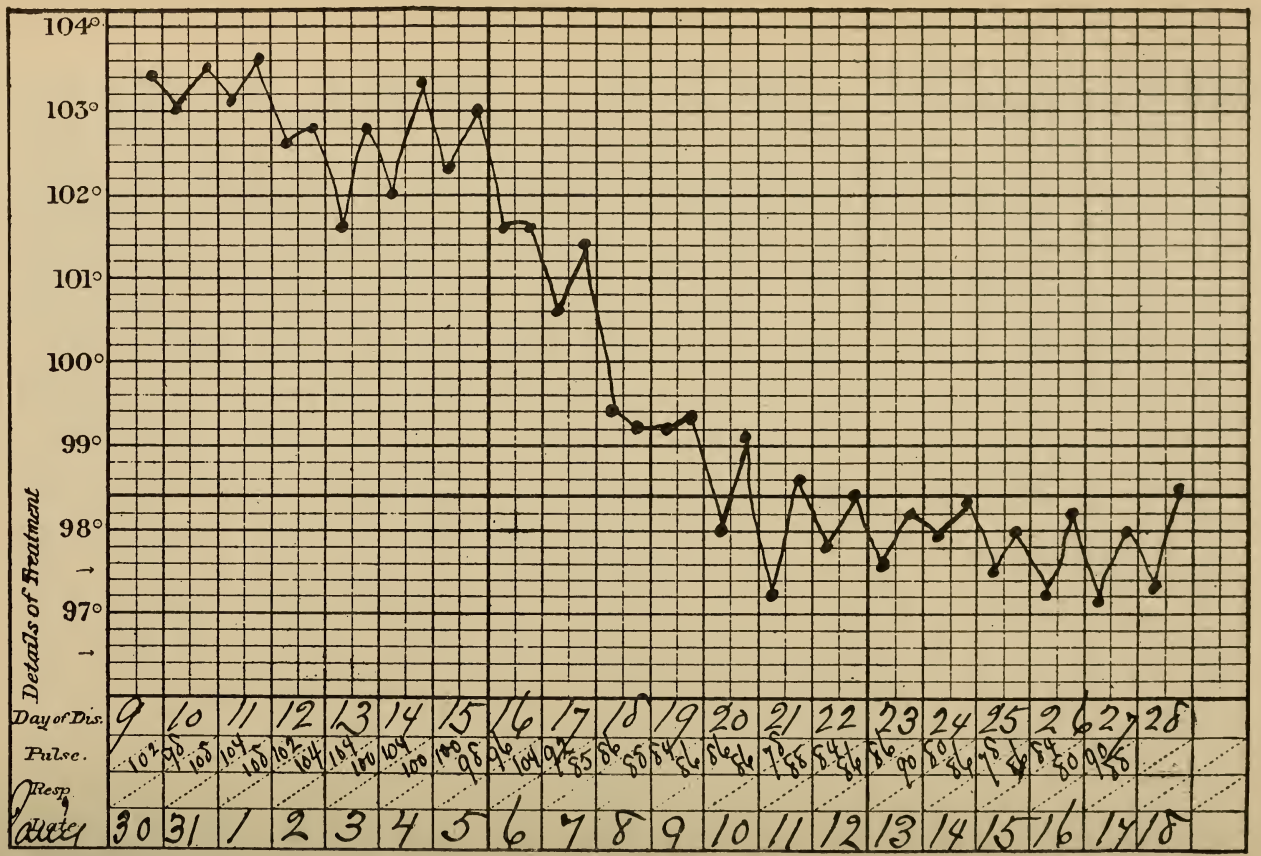
This patient was the fourth case of typhoid fever in the family, one of whom died after an intestinal hæmorrhage. His nervous symptoms being very severe, the attending

physician asked for counsel, and Dr. Justice, of Poland, was called. After consulting, the two physicians went together to the family, and told them that Mr. M's symptoms were so very bad that they advised them to send for me in consultation, expressing the opinion that the patient would die under any other than the "Woodbridge treatment." I



CASE NO. 89.

found the patient in an exceedingly precarious condition, but after a conference with the doctors I said: "There is no danger of a fatal termination. He will have a normal temperature in ten or twelve days;" and added, "there is not only no danger of death in this case, but there never is any danger of death from typhoid fever when taken at the stage at which we take this case." Yet his pulse was 100,



Dr. Udell's Case No. 1. Iva M.—Typhoid Fever. Date of admission, July 25, 1894. Treatment, gave alteratives and quinine during first part of sickness; began Formula No. 1 on tenth day of disease.

and his temperature was 105.2°, and his other symptoms were extremely grave, and I was not expected to see him again. My prognosis was verified by the result, for his temperature touched normal on the tenth day of treatment.

Case No. 88. Cornelia G. Dr. Frazer's case.

Case No. 89. Paul G., aged four and one-half years. (See chart.)

This case was first seen on the 16th of October, 1894, when the child had nose bleed, severe headache, bowels very tympanitic, and was slightly delirious. On the twelfth day of treatment rose spots were abundant. On the eighteenth day he was playing out of doors, but was very cross and irritable.

Case No. 90. Iva M. Dr. Udell's case. (See chart.)

Case No. 91. Mrs. Alexander G.

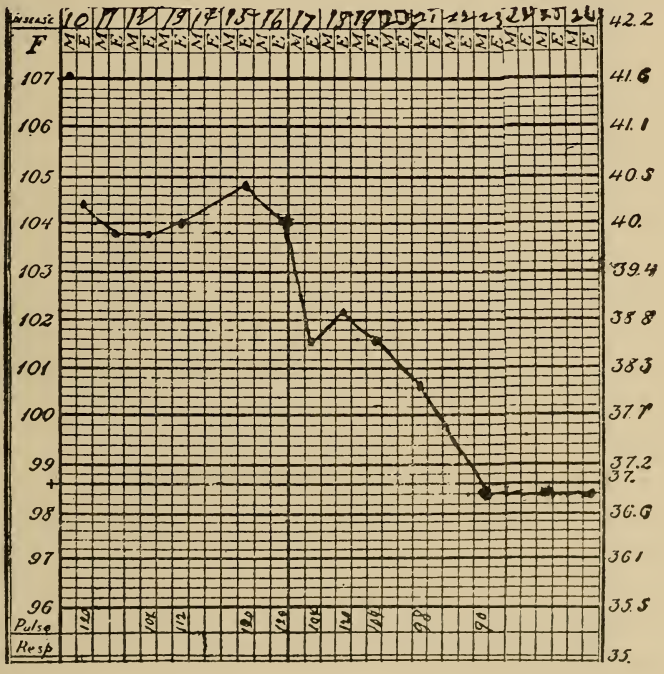
This patient was seen in consultation with her attending physician, Dr. Justice. Her urine showed large quantities of albumen, and had an abundance of both granular and hyaline casts. Her temperature never went above 101°. She had considerable intestinal hæmorrhage, but made a good recovery.

Case No. 93. Mrs. D., aged twenty-four years.

When called to see this patient I was told that she had been sick about ten days, but later information led me to believe that she had been sick twelve or thirteen days. The sanitary surroundings were terrible; her condition and circumstances horrible; neither any part of the bedding nor her underwear were changed, nor were her hands or face or any part of her body washed during her sickness. On one of my visits I found the unemptied bedpan on the bed, and on inquiring found her bowels had moved on the morning of the preceding day. In no way were the ordinary demands of cleanliness attended

to. There was a cooking stove in a back kitchen, which was separated from the house, and no fire elsewhere; it was cold weather, with snow most of the time.

The room adjoining hers, separated from it by only a loose board partition, was scrubbed once, and when I went in I found water standing in puddles about the floor.



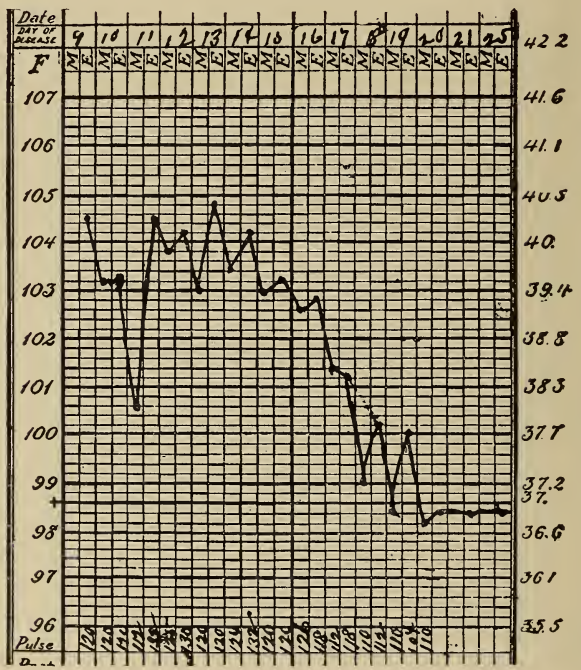
CASE NO. 93.

Her husband was taken from her bedside to jail. When I first saw this patient she had intense headache; no sleep for three or four nights; very nervous; abdomen tender and very tympanitic. She had three hæmorrhages from the bowels on October 15, the fifth day of treatment. She made as you see, a rapid recovery, her temperature becoming normal on the thirteenth day of treatment. She

lived so far in the country that I could not visit her every day.

Case No. 92. Mrs. J. O. Y., aged twenty-four years.

This patient was the wife of Dr. J. O. Yost, of Hazelton, Ohio, and had been under the care of Dr. Bennett, a gentleman of unquestioned ability (who about



CASE NO. 92.

a year ago passed through a very severe ordeal with typhoid fever, was confined to his bed for six weeks, was unable to attend to business for an additional three months, and even yet has not gotten entirely over the effects of the attack).

Seeing his patient growing worse, Dr. Bennett called upon me, and asked me to see her, on October 27, the

tenth day of her illness. I found, as he said, a typical case of typhoid fever; the temperature 104½°; the pulse varying between 110 and 134 and which later in the disease became dicrotic. The bowels were very tender and tympanitic; marked dullness over the spleen; the margins of the tongue red, the center coated; much gurgling on pressure; a few rose spots, which afterward became abundant; nervous and sleepless; and very severe headache. The temperature touched normal on the tenth day of treatment. During my first visit, both Dr. Bennett and Dr. Yost asked me if I considered Mrs. Yost in very great danger. I answered giving my usual prognosis "typhoid fever is never dangerous if properly treated at the commencement of the disease."

Case No. 94. Dr. J. O. Y., (Husband of Case No. 92.)

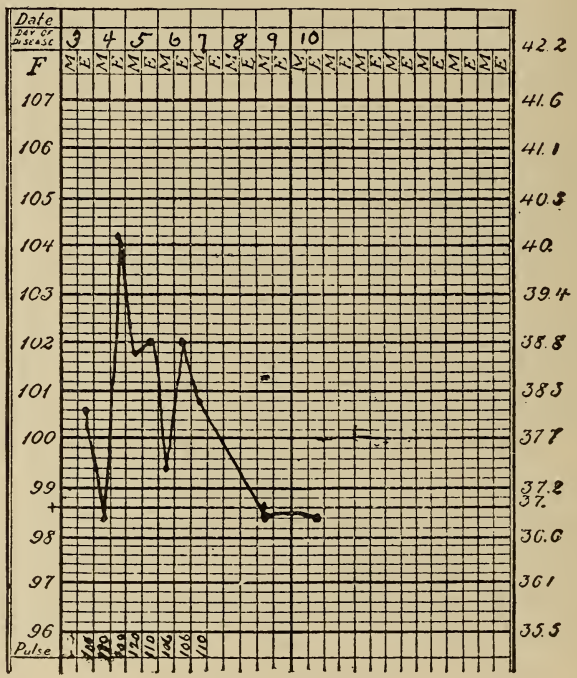
October 29th, two days after my first visit to Mrs. Yost, Dr. Bennett called my attention to Dr. Yost, saying that he believed that the Doctor had typhoid fever.

On examining him, I found his symptoms nearly as well marked as were those of Mrs. Yost, save that his temperature and pulse were not so high nor frequent, and he had no rose spots. He at once said that if he were going to be confined to bed, he should go home. I replied: "Stay at home and attend to your practice. I assure you that you will be able at least to see patients in your office every day of your sickness." And he was.

Case No. 96. Kittie Y., (Sister of Case No. 94.)

On November 3, five days after her brother was taken ill, this patient was attacked with typhoid fever. She did not say any thing about being ill until she was no longer able to sit up. Her temperature on the day before I saw

her was 104½° her pulse 100, and all the symptoms characteristic. On November 2 she had severe headache, her cough was incessant, her abdomen tympanitic and tender and pressure produced gurgling. I told the Doctor that she would have to stay in bed three or four days, perhaps, but would be well in ten days and could eat solid food all of the time.



CASE NO. 96.

At the time of the illness from typhoid fever of the family of Dr. Yost, a man who lived in a boarding house near by, died, and the necropsy revealed extensive typhoid lesions, and a perforation of the intestines.

Case No. 95. Miss K. This case presented characteristic symptoms of the disease, severe headache;

tympanitis, etc. She was not confined to her bed all of the time, and recovered rapidly.

This closes the record of those cases of typhoid fever which I have treated since the last meeting of this Society. Some of these patients, whose complaint was diagnosticated and treated as typhoid fever, may possibly have been ill with some other fever, but whatever was the infirmity, they all recovered under the abortive treatment of typhoid fever. This manner of managing the disease is the least harmful and most salutary they could have had; there being nothing in it that could possibly be injurious to the health in any condition, in the doses which I have described and it would be invariably beneficial in all disease of a microbic origin.

No sane man would have the fool-hardiness to dare to enter the abode of his patients, with two or three members of the family ill with typhoid fever (the temperature of some of the patients being above 105° F.) and give this one invariable prognosis, unless he were perfectly cognizant with the fact that there was some invincible power in medicine to ward off the threatened danger. No man would be imprudent and incautious enough to dare to make the promises that I have made for so many years, unless he knew whereof he spoke and that he could triumphantly fulfill them.

Remember, I have invited the most unremitting scrutiny of my cases while under treatment, and should I have a death from typhoid fever or should I fail to abort a case, in which I had commenced the treatment early in the disease, this fact would be emblazoned all over this broad land. Had I twenty years, instead of this fleeting twenty minutes, and could I take you back through the past twelve years of investigation, and present to your

view all of the miscellany of evidence that has proved to me that typhoid fever can be aborted; could I enumerate for you all the typical cases that have yielded so facilely and submissively to this intestinal antisepsis; point out the awful complications that have menaced life; show you the white haired old lady, whose symptoms denoted most positively the proof that she had a pre-existing Bright's disease, and the repeated intestinal hæmorrhage that her acute malady was typhoid fever of the most perilous and terrifying type; show you the venerable old man of 73 years of age, whose beloved young son had succumbed to fatal intestinal hæmorrhage; could I let you look upon the young lady, with the year old ovarian trouble, presenting a rounded fluctuating mass through the abdominal walls; could you see the wife of Angus McPhee, with the blood welling up from her lungs and could I show you, as in a kaleidoscope, all of these patients restored to hale and vigorous health in a few days, after having been, during the illness in many instances, surrounded by the most unsanitary conditions and much of the usual routine of the sick room, which of old, has been invariably insisted upon as essential to recovery from typhoid fever being disregarded and sometimes totally dispensed with. Many of these patients had only such nursing as a young child could give. In some cases, no restrictions in regard to diet were made, and all were allowed to use their own pleasure as to exercise (when there had been no serious intestinal lesion) and bathing and yet I can show you that I have had no death to mar my record.

You should commend my course in making so great a sacrifice, and even endangering my professional career in the interest of humanity, by placing myself in the unenviable position of one who fixed a higher standard of responsibility for his profession than it was ready to accept.

In the abortive treatment of typhoid fever an early diagnosis is of the first importance. Every case of the disease should be put upon proper treatment the first time it is seen by the physician. There should be absolutely no exception to this rule. If you await the development of pathognomonic symptoms of typhoid fever before beginning treatment you will not always succeed in aborting the disease. Therefore a change of diagnosis from any other disease to typhoid fever is wholly unjustifiable; but the reverse is always proper, because the best possible treatment for typhoid fever is also a safe initial treatment for any disease for which it could be mistaken.

If you always begin proper treatment when you first see your patient, he will often be well before a positive diagnosis is possible, and you will be deprived of what might otherwise have been a valuable record of a case of typhoid fever, but your patient will be the gainer, and after all we are physicians first and investigators afterward. Hence, when consulted by a patient who could possibly become a victim of typhoid fever, diphtheria, influenza, pneumonia or any pathologic condition which would be benefited by an intestinal or systemic antiseptic or eliminant, begin at once the treatment for typhoid fever.

It must not be supposed that because I have been able to begin the treatment at almost every stage of the disease in the large number of cases I have treated and have had no death from typhoid fever or any disease that could be mistaken for it for more than twelve years, that such results are always possible. These cases make the proof positive that typhoid fever can be aborted, but it does not follow that it can always be aborted or even that every life can be saved when the disease has not been properly treated in its earliest stages. Next in importance to an early diagnosis,

if indeed it should not stand *first*, is that your prescriptions be properly compounded, of pure and active ingredients, for upon the freshness, purity, activity and proper preparation and combination of the drugs, as much as upon their administration, depends the physician's ability to abort typhoid fever. I was, myself, long in learning this important lesson, and longer in learning upon whom to depend for the preparation of remedies that would contain neither inert nor irritant constituents. Messrs. Parke, Davis & Co., of Detroit, Michigan, have for many years supplied most of the materials entering into my prescriptions, and latterly they have put up for me tablets of formulas Nos. 1 and 2; soft capsules of formula No. 3; and for children, tablets of Formula No. 4, and soft capsules of formula No. 5. Their work has been done in a most satisfactory manner, and by long experience I have learned to rely upon their preparations so implicitly that I would not feel justified in possibly endangering the lives of my patients by experimenting with the products of other manufacturers.

This antiseptic treatment of typhoid fever, commenced in an early stage of the disease and intelligently carried out, will, if the remedies be pure, active, and properly prepared, abort typhoid fever; and if used universally by the medical profession a death from the disease will be unknown.

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*The treatment has been cut out of all these papers because it has been modified and simplified.

TYPHOID FEVER IN CHILDREN.*

Typhoid fever is the same disease, is produced by the same causes and is governed by the same laws, at whatever time of life it may occur, from earliest infancy to the frailest anility; modified as it may be, by age, by organic development, by concurrent affections, or by extrinsic causes, and probably by the quantity of poison ingested. In the child as in the adult, it is caused by the same morbific influence, which can be neutralized by the same antidotes. In either instance the patient should be regarded and treated simply as the container of the specific poison.

It follows, that notwithstanding the minor modifications which the character of the disease may undergo, on account of age or other causes, that it is amenable to practically the same curative treatment in infancy as in adult life.

I must, therefore, make the same declaration here that I have made in every medical society before which I have discussed typhoid fever since 1880, viz., that every case can be aborted and that death is a wholly unnecessary consequence of the disease; and farther, that these results are attainable by a treatment so mild and gentle that, should the newborn babe be given the dose intended for robust manhood no harm would result; or should the child, overfond of its medicine, take at once the portion intended for fifty doses, it need cause no anxiety.

* Read in the Section on Diseases of Children, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

Yet symptomatically treated, typhoid fever is one of the most serious affections of infancy and early child life; and in the most alarming forms of the disease, in which the fever rises rapidly to an excessive height and the nervous symptoms point to some grave cerebral lesion, the true character of the ailment is rarely recognized in time to benefit the patient. Indeed, in a very large majority of these cases a correct diagnosis is never made. Therefore, while treating of typhoid fever in the adult, my pleading has always been for an *early* diagnosis. In discussing typhoid fever in children, the burden of my plea must be for a *correct* diagnosis; since the disease in babyhood is so frequently overlooked.

While Murchison and other eminent authorities have recognized and acknowledged the possibility of the occurrence of typhoid fever in earliest infancy, and even during utero-gestation, yet neither the best text-books, the teachers in the medical colleges nor the general practitioner have realized how frequently the disease occurs in desperate forms during early childhood.

Reynold's "System of Medicine" devotes more than seventy-five pages to typhoid fever and does not mention the disease in children in the whole article. Pepper's "System of Medicine," in five large volumes, justly praised wherever the English language is spoken, yields less than two dozen lines out of more than one hundred pages on typhoid fever to the disease in children. Professor Osler, whose "Principles and Practice of Medicine" is perhaps more largely quoted than any other work on the subject, disposes of typhoid fever in children in less than one dozen lines, and this is the author who says: "Cases (of typhoid fever) coming on with severe headache, photophobia, delirium, twitching of the muscles and retraction of the head

are almost invariably regarded as cerebro-spinal meningitis." And again, "I have thrice performed autopsies on cases of this kind, in which no suspicion of typhoid fever had been present; the intense cerebro-spinal manifestations having dominated the scene. * * * Cerebro-spinal meningitis is, however, a rare disease; typhoid fever a very common one, and the onset with severe nervous symptoms is by no means infrequent. Fully one-half of the cases of the so-called brain fever belong to this category."

But while medical literature has recognized the possible predominance of the nervous symptoms of typhoid fever in the adult, it has failed to give due warning of the frequency with which these symptoms occur as the most prominent manifestations of the disease in early childhood, an omission which has been responsible for many errors in diagnosis and treatment.

In the first number of the *Journal of the American Medical Association* for this year, 1895, a distinguished professor of the diseases of children says that: "It has been my good or ill fortune to see during the past ten years, a number of cases in children under the age of two years which presented mild intestinal disturbance, no marked tenderness over the bowels, a very high temperature, and where the apparent cerebral complications, delirium and stupor being prominent symptoms, were the apparent cause of death In these cases, in the death certificate, the cause of death was usually given as congestive fever or meningitis. Two of these cases occurring within the past year, in both of which the post-mortem examinations revealed a pronounced error of diagnosis, has emphasized in my mind the thought that typhoid fever exists more frequently in early child life and in a serious form than is generally suspected. I present the following case:

"A little girl of eighteen months, the child of a very prominent physician, was taken sick early in May, with marked intestinal disturbances; the evacuations from the bowels were frequent and copious, accompanied by mucus and blood. The temperature ranged from 102° to 104°, and on one occasion reached 105°. There seemed to be a history of acute indigestion. The usual treatment was applied in this direction, and the temperature was controlled by cooling baths. Flushing of the colon with medicated warm water was applied, followed by starch water injections containing a few drops of laudanum, for the purpose of calming and reducing the frequency of the operations, which interfered with sleep. During the early part of the attack, the child, though having frequent operations, was noticed to be calm and gave no evidence of pain. Not until the fourth day, however, was marked obtundity observed, and the staring appearance of the eyes, together with the indifference to surroundings, impressed me with the fact that there was a cerebral complication. The course of the treatment was continued and the supposed cerebral complication became more pronounced. Inability to distinguish light or sound, and a crossing of the eyes, apparently justifying a diagnosis of meningitis. The child died about the tenth day. Post-mortem examination developed the absence of meningeal inflammation and the presence of ulcerations of the glands of Peyer, showing us, the physicians in attendance, how little we knew of the cause of death."

The author adds: "The indications for treatment were the same. A recognition of the disease in advance would probably have made no difference."

I have quoted thus largely from this paper because it is really a valuable contribution to medical literature, and I honor the learned author for giving less enlightened members of the profession the benefit of the many sad experiences which have finally opened *his* eyes to the fact that he has been stupidly floundering in his differentiation of dis-

eases, albeit he has yet to learn of his greater deficiency in knowledge of the treatment of typhoid fever. I forego all criticism on the long years and the number of pronounced errors of diagnosis which were required to implant in his mind a just conception of the vast number of children who must die annually of typhoid fever, after having been treated by the average practitioner for acute indigestion, and later for meningitis, and finally are buried under a false death certificate. If this article, by one of the world's most distinguished professors and medical editors, truly represents the practice of the class to which he belongs, it paints a sad picture of the little victims of typhoid fever who were so unfortunate as to have come under their skillful care. It presents to our view what costly mistakes these illustrious gentlemen make, and yet the author eliminates but one or two of the diseases with which, in infancy and early childhood, typhoid fever is so often confounded.

With our present knowledge of the causes which produce typhoid fever and the susceptibility of young children to their influence, taken in connection with the exceedingly limited number of cases of the disease which are reported to the various health departments in our cities where the disease prevails, it must be evident that the eminent writer of the paper quoted is not the only physician who should have had the fact emphasized in his mind "that typhoid fever exists more frequently in early child life and in a more serious form than is generally suspected."

I have in consultation seen typhoid fever in young children mistaken for malarial fever, pneumonia, cholera infantum, teething, and even for worms, in addition to meningitis and acute indigestion.

The diagnosis of typhoid fever in children as in adults

should be made by reasoning by exclusion, and if thus the disease cannot be eliminated from the patient's possible ailments, the case should be treated as typhoid fever, because no other disease is so insidious in its character; because no other disease is so amenable to treatment in its earlier stages and so intractable after its anatomic lesions have reached a certain stage; because it is so often impossible to make a positive diagnosis in time to save the patient's life; and finally because the best treatment we yet know for typhoid fever not only fulfills both of the requirements of Hippocrates; it is curative, it is harmless in health or in any pathologic condition at all resembling the disease for which it is instituted.

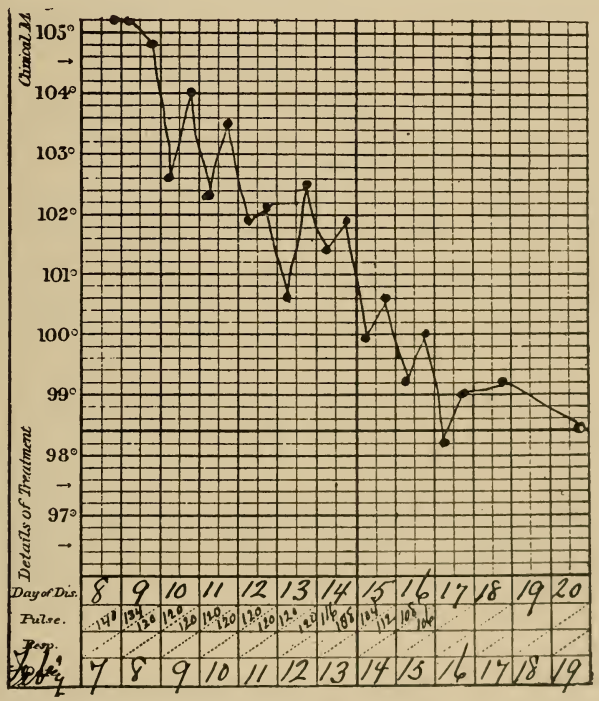
I learned the importance of making a correct diagnosis in typhoid fever many years ago, and in 1881 I was taught a lesson on the management of the disease in children which I shall never forget.

Little Gracie Wick, aged three years and ten months, was taken sick on December 14. Her temperature on my first visit was 105°. In fourteen days she died of typhoid fever. A few weeks later her younger sister Emily, aged two years and ten months, was attacked by the disease, which ran a parallel course and ended in death, again on the fourteenth day. Both children presented abdominal symptoms. In both the nervous symptoms predominated. Both had opisthotonos, and both died the victims of almost criminal stupidity on my part. They were my last two fatal cases of typhoid fever, and to-day should I be called as promptly as I was then, they would have been in no danger of dying.

Looking back to those gloomy days, I cannot realize why I let those children die, for I knew well enough how to treat typhoid fever in adults even then. I made a very inadequate effort to assuage the pangs of conscience by calling two of the oldest and ablest physicians of the city in

consultation after the time had passed when counsel could have been of any avail.

As a marked contrast to the sad picture portrayed by the death of these little ones, my last two fatal cases, I wish to present the clinical charts of a few of the cases of typhoid fever I have treated during the intervening years



CASE NO. 105.

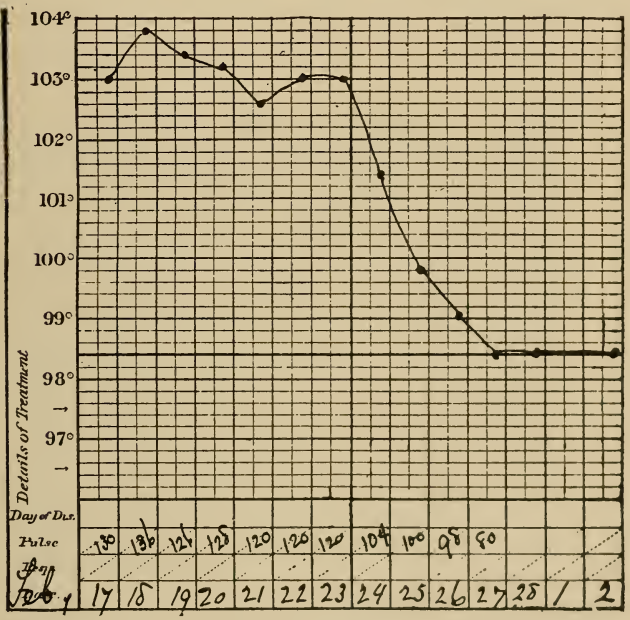
and relate the annals that have been kept of them, and as an addendum give the records of a few cases treated by other physicians, by that which for want of a better name I have designated antiseptic medicine, for it is antiseptic medicine, and it is also something more.

Case No. 105. Annie W., aged three years. (Cousin of Case 78, John J.) I was called to see this patient on

February 7, and given the following history: She had been sick eight days, had been treated by an irregular physician, under a diagnosis of malarial fever until the parents, alarmed by the severe symptoms, continued high fever and the enormous tympanitic distention, questioned him closely as to the nature of the disease, finally eliciting from him an admission that it might be typhoid fever, when he was promptly discharged. I found the temperature 105.5°, pulse 140, on the evening of my first visit, and the same the next morning; the parents having about given up hope, as the child was thought to be dying twice during the night preceding my first visit. There was marked impairment of vision, deafness, and well-marked retraction of the head. When asked if I entertained any hope for the life of the child I gave my usual favorable prognosis, saying: "I think the child will recover, and she certainly will if she survive the next forty-eight hours." She had intestinal hæmorrhage, which in my experience is rare in young children. She also lost all power of speech, her lower limbs were paralyzed, she had just recovered from whooping cough, which returned to plague us during this attack of typhoid fever, in spite of which she made a good recovery. Her temperature, as you will see, touched normal on the tenth day of treatment, but went up slightly again on the eleventh day. On the thirteenth day the temperature and pulse were normal and the patient was discharged, and ten days later was in more robust health than before her illness.

Case No. 111. Sarah J., aged thirteen years. (Cousin of Case 105, Annie W.) When I first saw this case her temperature was 103°, pulse 130. The next evening it was 103.8°, with a pulse of 136. I gave my usual prognosis, ten or twelve days of illness, no danger. Her temperature touched normal on the tenth day of treatment. This case was an exception to the almost invariable rule commented on by so many observers, that after this so-called antiseptic treatment of typhoid fever, almost as soon as the temperature touches normal the patient is in better health than

before the illness. This patient had had some stomach trouble before her illness, and although she recovered quickly from the fever and her appetite was better than usual for a week or two, she has since been to my office several times for treatment of her old trouble.

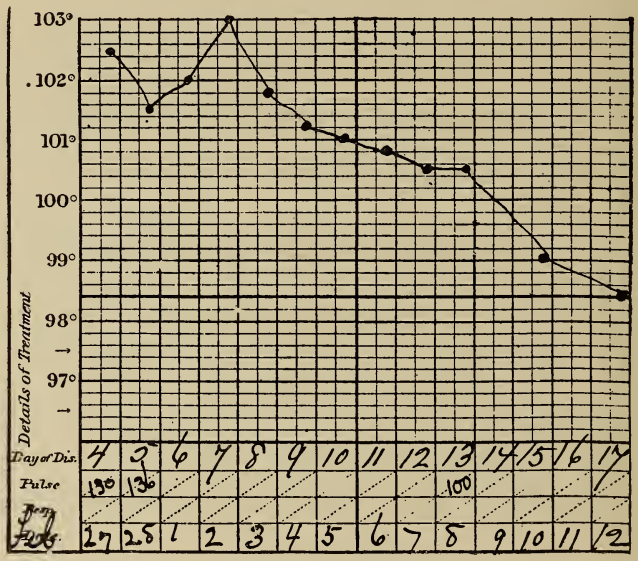


CASE NO. 111.

Case No. 112. Florence J., aged eleven years. (Sister of Case 111.) On February 27, the temperature of this patient was 102.5°, pulse 130. Three days later it was 103°, from which time it declined to normal on the thirteenth day of treatment, the patient being in good condition and having an excellent appetite.

Case No. 113. Blanche J., aged five years. (Sister of Case 112.) This patient had a temperature of 101.5° on March 2, with a pulse of 128. On the third day of treatment it was 104° from which point it declined to normal on the eleventh day.

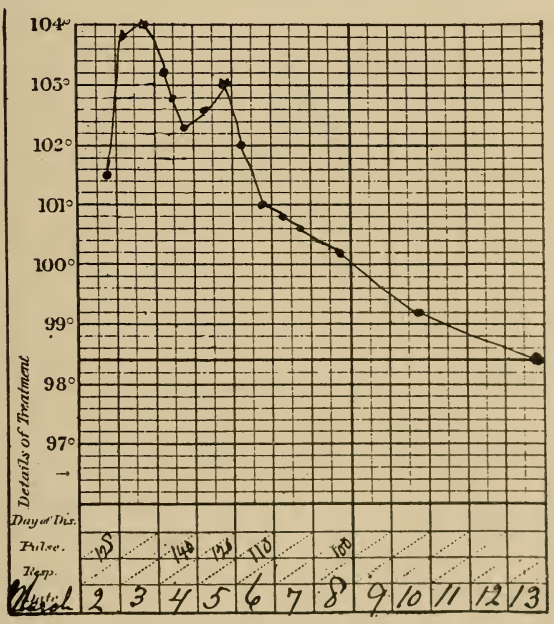
I am not infrequently called to see young children, especially in consultation, in the late stages of typhoid fever, when no suspicion of the character of the disease had been aroused, but in which the symptoms are so distinctive that no trouble should have been experienced in making an accurate diagnosis. One case of this sort which had been, however, under the care of an irregular practitioner, was



CASE NO. 112.

Case No. 98. Margaret O., aged two years. I found the child lying in a cradle, in the corner of the kitchen, between the wall and the cooking range. She was moaning pitifully and sometimes screaming violently; her head was retracted and turning rapidly from side to side. A diagnosis of brain fever had been made. The temperature was 106°; the bowels very tympanitic and the stools very frequent. Taking the necessary steps in the order of their importance, I first dropped a little powder (to be described hereafter) on the child's tongue; I then ordered the cradle to be moved

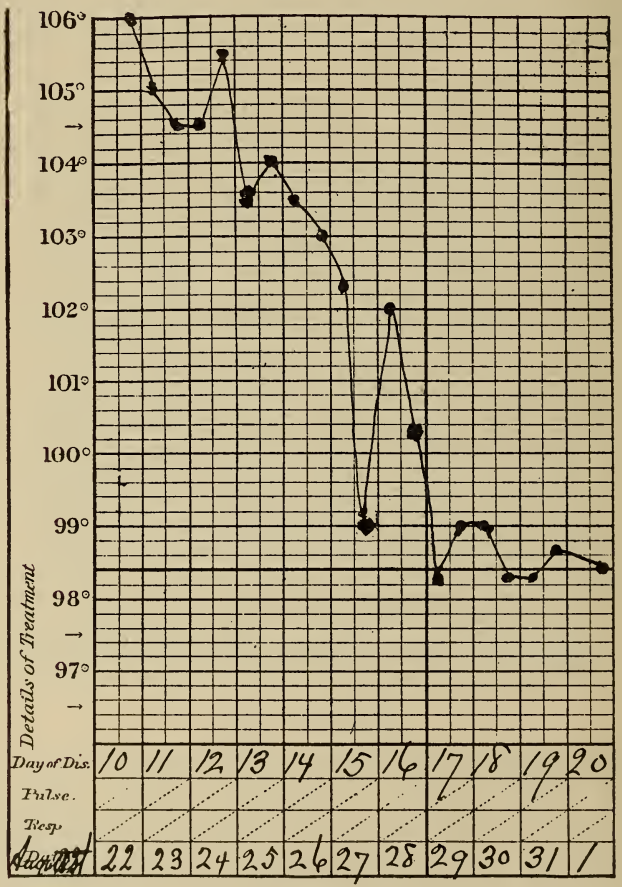
as far as possible from the fire, and had the child sponged and ordered that the powder be given every fifteen minutes. Later in the night I visited the child but found little change in its condition. The next day I visited her three times and that evening the temperature fell to 105°. The following day the symptoms began to improve rapidly, and she made a quick recovery, being well in ten days.



CASE NO. 113.

While visiting this child on the second day, I saw a younger child sitting in a suspicious position and when it moved a bloody stool remained. Glancing around the floor I saw two or three others, which though small were quite apparent. I asked the mother to explain and her answer was brief and to the point: "I declare to goodness he's been doing that all day!" Upon examination I found the child with a very rapid pulse and high temperature. The recovery of this child was somewhat tedious, owing to the advanced stage of the disease when I was able to begin treatment.

One of the most prominent physicians in Chicago, (a gentleman who was long at the head of Cook County Hospital, and was for many years one of the most highly esteemed professors in the foremost medical college in that



CASE HELEN McC.

city so noted for its clever and accomplished preceptors, and whose name is cut in the corner stone of the college, as one of its founders) has done me the honor to write me several

letters of inquiry (he is altogether the best questioner with whom I have ever corresponded) in regard to my method of treating typhoid fever. He has favored me with the reports of several cases treated since our correspondence began.

Case marked—"Dr. McWilliams No.— Helen McC., aged six years and three months. She was taken sick, as you will observe, while away from home at a summer resort. A diagnosis of typhoid fever was made by a local physician, and on the tenth day she was sent home to be under the care of the family physician, Dr. McWilliams. Her temperature was 106° the first day that the Doctor saw her and on the tenth day she was sitting up, dressed, enjoying 'Judge,' 'Puck,' etc."

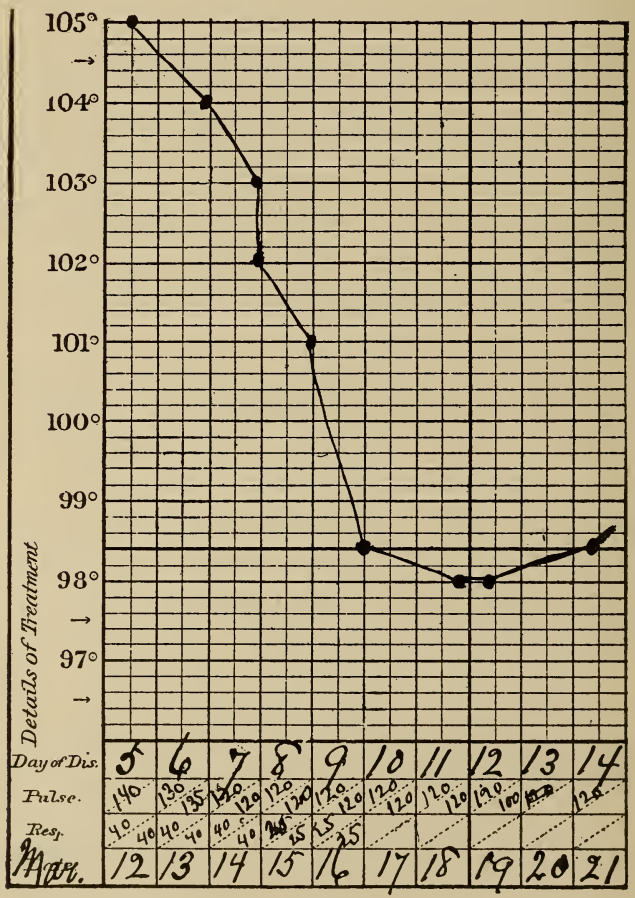
Dr. Cunningham, of Youngstown, reports the following:

Case marked "Dr. Cunningham No.— Ella G., aged seven months. She was under the care of three different physicians, before I saw her in consultation.

The first physician (according to the statements of the family) made a diagnosis of whooping cough; the second physician said it was meningitis." The child growing worse, Dr. Cunningham was called and made a diagnosis of typhoid fever. When the temperature went to 105° he called me in consultation. The chart indicates the rapidity with which the child recovered. The correctness of the diagnosis was corroborated a few weeks later, when the mother of the child (see chart marked Dr. Cunningham No.— Mrs. G.) had an attack of typhoid fever, from which she recovered; and the uncle (see chart marked Dr. Cunningham No.— James K.) died of shock, resulting from an intussusception, occurring after he was almost well from an attack of typhoid fever.

Dr. C. N. Udell, of Iowa, kindly sent me a report of

twelve cases of typhoid fever, and one of cholera infantum treated by my method, with excellent results from which I extract the following record of cases of typhoid fever in children:



CASE ELLA G.

Case 8. S. B., male, aged nine years. Was taken with chills, fever, headache, vomiting and some abdominal pains. Treated by the family for ague. I was called after the boy

had been sick eight days. Found the temperature 104.6° skin dry, tongue very dry and red, dirty gray fur in center; very nervous; hyperesthesia, delirium, a papular rash; secretions locked. Gave to this boy Nos. 1 and 2 for two days; repeated it at short intervals. Then No. 1 for three days; No. 3 for four days. Discharged patient on ninth day. In this case, as in all others, I insisted on frequent sponging of the body, frequent change of linen, good ventilation of the sick room, same food given at regular intervals, etc.

"Case No. 10. N. S., male, aged eight years. Had an intermittent fever. Prescribed c. cath. pills and quinine without seeing patient. Continued sick and weak; no improvement. Visited the boy and found temperature 104°, skin dry, suppression of urine; very weak, headache, and general aching, some delirium, very foul breath, heavy gray fur on tongue with edges red, sordes on teeth, a good deal of tympanitis, some eruption, and sudamina. Diagnosis: septic fever, or paludal typhoid."

"Gave R. No. 1 and No. 2. After three days gave R. No. 3. On the seventh day gave Nos. 1 and 2 again. Then No. 3 for about one week at longer intervals. Patient discharged well."

"Case No. 11. D. H., male, aged two years. Was sick with diarrhœa, high fever, very restless, abdomen puffed, vomiting, and furred tongue with foul breath. Gave baptisia tinct. R. No. 3 in minute doses. Recovered in five days."

Case No. 12. E. P., aged eighteen months. Hygienic surroundings very bad. Child had cholera infantum with very offensive stools. Gave R. No. 1 in very minute doses every half hour. Had the child kept as clean as possible, and that was not very clean. The child recovered speedily in spite of bad nursing.

These cases illustrate the admirable results which may be invariably obtained and even confidently predicted, when proper treatment has been instituted at a sufficiently early stage of the disease and intelligently and energetically pros-

ecuted; and they, by contrast, serve as a warning against the danger of mistaking the nature of the most common, the most dangerous and by far the most frequently overlooked cases of typhoid fever in children, viz., those cases in which the nervous manifestations are in the ascendant; those cases which are diagnosticated as brain fever, meningitis, or cerebro-spinal meningitis. These are the cases in which an inaccurate diagnosis is most liable to occur and which is so often followed by such disastrous results.

As long as the best treatment for typhoid fever, known to the medical profession, aimed only to ameliorate the most perilous symptoms as they presented themselves, it did not, perhaps, greatly signify when an exact diagnosis was made, or indeed, whether or not it was ever correctly made but we are approaching a more enlightened era. In reality, the day has even now dawned upon us in which the treatment to a fatal end, of a case of typhoid fever with a temperature of 105°, as a case of indigestion, with inefficient antiseptic medicine, starch and laudanum injections, and cooling baths, is no longer admissible.

The physician who respects the Hippocratic oath and does the utmost in his power for his patient, must acquire skill in differentiating betwixt those diseases which can and which cannot be benefited by the abortive treatment of typhoid fever.

Without entering into the field of speculative controversy, it may be generally stated, that any of the so-called microbic diseases, such, for instance, as diphtheria, malarial fever, measles, scarlatina, cholera infantum, etc., would lose much of their fatality if treated on the same general principles which I have so often advanced for the treatment of typhoid fever.*

* The treatment of typhoid fever in children is transferred to its proper place after treatment.

REPORTS ON TYPHOID FEVER (CONTINUED).*

EIGHTH PAPER.

Mr. President, and Gentlemen of the Society :

A few days since, I over heard a physician say: "there is no physician in the world so learned, and possessed of such perfect integrity, as to have been able to convince me, by any statement, that the uniform results I have seen Dr. Woodbridge secure in the treatment of typhoid fever were possible." When asked by his interlocutor what he regarded as the strongest evidence of the truth of the declaration that "typhoid fever can be aborted," he answered; "seeing it done." "After that, the charts and reports of cases of other physicians who have treated typhoid fever by Dr. Woodbridge's method, and have thus succeeded in saving the life of every patient and greatly shortening the duration of the disease." His remarks prompted me to amend the report which I had prepared, of cases of typhoid fever which I had treated during the past year, by embodying in it some accounts of the failures and successes of other physicians, who have essayed the abortive treatment of the disease, relying on the directions which I had given in papers (written only to prove that the disease could be aborted), on hastily written letters, on instructions given orally, or on bedside consultations. Many of them have shown their enthusiasm over the results of their trials and

*Read before the Ohio State Medical Society, Columbus, Ohio, Seventeenth of May, 1895.

tests of this method of treatment, by sending me clinical charts of the cases; and gratefully acknowledging their indebtedness to me for their marvelous success.

A most laudable example of true courage and heroism to thus report results (the very possibility of which had been so strenuously denied), which precedent it is devoutly to be hoped may be largely followed.

As the object of this paper is to place the Ohio State Medical Society in a position to reach a just conclusion of the veracity of the affirmation, "that typhoid fever can be aborted," I shall draw from all these sources. Many of the original clinical charts (copies of which I hand you) and the letters from which excerpta are made, are here for your inspection.

Those of you who were present at the last meeting of this Society, when I read my paper on "typhoid fever," will remember that a member arose in his place, and said: "being from Dr. Woodbridge's town and Society, I wish to say that we have had several "fights" on this subject and we have been watching his cases for several years, to see if he could make his pledges good, but so far we have been unable to discover that he has made any failures, or had a death from typhoid fever. And we intend to continue to watch him in the future, and if he have a death we will report it." The fact that no such publication has been made, may be accepted as conclusive testimony that for thirteen years I have had no death from the disease and have aborted every case of typhoid fever which has come under my care at a reasonably early stage of the disease.

During the past year I have treated alone or in consultation fifty-eight cases of typhoid fever. During the same period, there have been treated by 117 other physicians, acting under my advice; by consultation at the bedside; in

conversations in which I have given very complete and precise counsels in regard to the guidance of the patient throughout the illness, more than eight hundred cases.

I have seen in consultation, during the past twelve months, two fatal cases.*

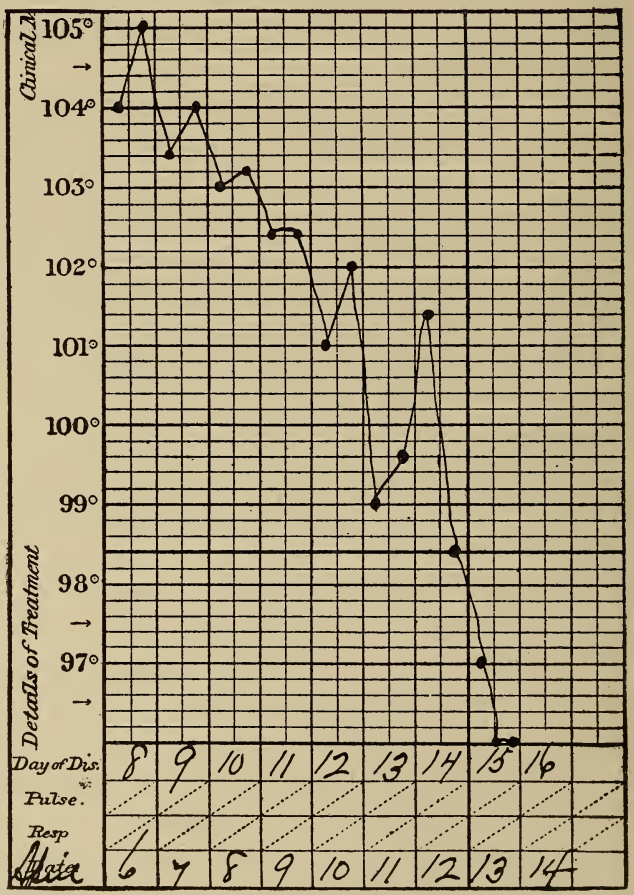
Case No. 1. Mr. H. C. O., of Sewickly, Penn.

This patient had been sick and feeling miserably, and under the supposition that he had la grippe, had been taking quinine for several days. Yielding to the inevitable, he finally went to bed and sent for a physician, who found that he had pneumonia. Later he had an alarming hæmorrhage of the lungs. No pathognomonic symptoms of typhoid fever were observed until the night of the 1st of December, during which he had numerous profuse intestinal hæmorrhages. I was called the next day and found him in a condition bordering on collapse, bleeding from both the lungs and bowels, and he died before the hæmorrhages could be arrested,

The only other fatal case which I have seen in consultation occurred in the practice of Dr. M. V. Cunningham, whose experience in the Cook County, Ill., Hospital and at the Emergency Hospital, during the World's Columbian Exposition, had served to render him an unusually accurate diagnostician and taught him to appreciate the value of antiseptic medication. Conservative to a degree, educated to believe that there was no power in medicine to abort typhoid fever, he had watched my cases with the eye of an unfriendly critic, until forced by the logic of my repeated successes, he called me in consultation several times, and consequently was able to produce such brilliant results in a number of instances that I had the most implicit con-

*Since this paper was written a third case, which I saw only once on the twenty-ninth day of the disease, died.

fidence in his ability to treat typhoid fever in a perfectly scientific manner.



CASE JAMES K. No. 3.

Case No. 3. James K., aged twenty-four years. (See chart marked Dr. Cunningham No. 3.)

This patient was very sick on the 30th of March. On the 1st of April he sent for a physician, who (according to the statements of the family) made a diagnosis of la grippe,

PLATE 1.

One section of ileum from near the ileo-cæcal valve and one section from about three feet nearer the stomach of Dr. Cunningham's case No. 3—James K.—of aborted typhoid fever, showing healthy granulating ulcers of Peyer's glands.

See chart of this case on opposite page.

and called again the next day. The patient growing worse, Dr. Cunningham, who a few weeks earlier had treated a niece of the patient through a very severe attack of typhoid fever by the method I had advised with unusual success (see chart marked Dr. Cunningham No. 4, Ella G.), was called on April 6, and on April 7, he called me in consultation. I found the patient had been so sick nine days before I saw him as to lead to the obvious conclusion that he had been sick even longer; a conclusion fully justified by his condition, his temperature having been the previous day 105°, his bowels excessively tender and tympanitic, nervous symptoms exceedingly bad, his tongue tremulous, very dry and brown. He had persistent hiccough, and was delirious.

The next morning Dr. Cunningham came to my office to say that his patient was so wildly delirious that his father, who was taking care of him, was unable to give him medicine and could with difficulty keep him in bed, and consequently wished to send him to the hospital, a desire which met my heartiest concurrence. This unfortunately was abandoned on account of expense.

I did not hear from the patient again until April 10, when Dr. Cunningham invited me to see him, remarking in a pleased way, "I would like you to visit him once more before he is well, and you must hurry or you will be too late, for his temperature was 101° this morning, and at the rate it is dropping it will be normal in a day or two." Visiting him about 10 A. M., we found his temperature 100.6°, his tongue moist and less coated, his head clear, his abdomen quite flat and entirely free from tenderness; tympanitis very slight; nervous symptoms greatly improved, and sleeping naturally. He had taken no antipyretics or stimulants. His condition having improved so rapidly

since my last visit, I told the doctor that I believed his patient would be well in less than ten days, and according to the reports he continued to improve until the following evening, when his symptoms were all better and his temperature was 99.6°. Up to this time the disease had run the usual course expected under antiseptic treatment, and save that it had been instituted too late to prevent necrosis and ulceration of Peyer's glands, which must needs have time to heal by granulation, the patient was nearly well.

Consequently I was greatly surprised when Dr. Cunningham telephoned me the next day, that the patient had had two convulsions during the early morning, and was very restless, delirious, and seemed to be suffering great pain, apparently abdominal, as indicated by the manner in which he rubbed and tugged at this region.

Examination revealed a doughy mass, filling up the abdominal cavity, most solid on the right side. He continued to have convulsions; his mouth and tongue became dry and parched; his temperature became subnormal; he grew more restless; his delirium became more profound; and he died of shock two days after the accident. The autopsy revealed an intussusception, the obvious cause of death by shock to the nervous system, already exhausted by the long and exceedingly severe delirium, and under great strain on account of the septic condition, due to the enormous pyogenic surface; the whole of the small intestines being inflamed, and all of the agminated glands of Peyer, in the more than six feet of intestine examined, ulcerated. The stomach and intestine above the intussusception were full and distended, almost beyond endurance; below it, empty and collapsed.

This case presents the strongest possible confirmation of the correctness of my diagnosis, because there is not, amongst all of these cases that I have reported as typhoid fever, a

PLATE 2.

Section of ileum from fatal case of typhoid fever (not treated by the Woodbridge method), showing unhealthy ulcers of Peyer's glands.

single case which offers fewer pathognomonic symptoms of the disease, than this one. It positively confirms my declaration that "typhoid fever can be aborted," for severe as it was, and despite the fact that treatment was so long deferred that necrosis of Peyer's glands was unavoidable: it yet pursued the ordinary course toward recovery, and before the unfortunate accident which caused his death, occurred, he was practically cured.

It presents the most convincing and irrefutable evidence of the validity of my assumptions as a whole, and it seems to me, that it should overwhelm with shame and confusion, the arrogant, and impudent critics, who forgetful of my nineteen years of clinical experience, with a method of treatment to which they have not given the slightest attention; presume to say that because the thermic line on the clinical chart does not present the so-called typical typhoid fever curve, ipso facto, it ceases to be a typhoid fever chart.

If any one of the gentlemen are present, who in former years have criticised my charts (and in doing so have positively asserted that a chart showing a step-like decline in the temperature, which touches normal in eight or ten days, could not be one of a case of typhoid fever), will scrutinize well the chart marked Dr. Cunningham's Case No. 3, James K., and examine also that book of charts, in it he will find that there are not three charts which depart further from the so-called typical "typhoid fever curve," than the delineation of the thermal line on the chart of this man, whose small intestine presented the most extensive series of ulcerated Peyer's glands that I have ever seen.

Had the physician, who was called to attend this man on the first of April, made a correct diagnosis, or failing to do so had he called in consultation a physician who, if unable to make a positive diagnosis, would at least have given the

patient the benefit of the doubt, and immediately instituted proper antiseptic treatment, the misfortune of an intussusception may still have befallen the patient, and he may have died; but he would have been spared those days of burning and torturing fever; those sleepless turbulent nights of wild delirium; the necrosis of Peyer's glands and their consequent dangers.

I have known all these years, that these were the clinical charts of cases of true typhoid fever; known that in some of the patients the disease had progressed so far that necrosis and even ulceration of Peyer's glands, had already supervened; and I have also been well aware that there were amongst them the records of the illness of patients, who, but for the treatment I had advised would have been sleeping beneath the sod.

In nearly every medical society before which I have presented dissertations on typhoid fever, certain members have wisely delivered themselves of one or more of the following sage citations, either literally or with a very slight rearrangement of words; as for instance. "We all know that typhoid fever is a specific infection that must run its course of four, five, six, or ten weeks or longer." Or it may be that one will sapiently remark; "if there is one fact in medicine that is well established, it is that the course of the disease in typhoid fever cannot be shortened by a single day." And these erudite persons seem to deem these parrot-like assertions as incontrovertible testimony, amply sufficient to confute totally and instantaneously, the whole of the accumulated evidence of my clinical experience; and indeed even quite sufficient to disprove the statements of all the proficient physicians who have corroborated my diagnoses and results. But it should be remembered, that unwarrantable assumption is not valid reasoning and the

plausible arguments that have been adduced in confutation of my claims are not more convincing than have been opposed to every step in the progress of medicine.

In the Cleveland Medical Society, where without malice toward any member of the medical profession of that city or locality ; but for the two-fold purpose of emphasizing my confidence in the potency of antiseptic medicine ; and also of letting the profession abroad comprehend and realize that I had attained the unattainable, that I had in defiance of all known laws of pathology, " achieved a victory " over diseases of a microbic origin, which, when accepted by the medical profession, would add perceptibly to the average duration of human life by greatly reducing the mortality from this class of diseases. I told what I had accomplished, described my method of procedure, and stated in strong language the responsibility which I believed devolved upon those members of the profession, who knowing or having the means of learning how to save the lives of all cases of typhoid fever, and who failed to give their patients the benefit of the knowledge ; thus nettling the members of this, as well as of my own local society, to such an extent that had my house been made of glass it would soon have been about my ears, for my expressions were harshly criticised, and in the heat of debate many broad and preposterous arguments were advanced.

The ubiquitous professor, already in possession of all of this world's knowledge that is worthy of his attention, was ridiculously conspicuous, in a way that would have been laughable, had not the subject been so serious, and exposed his ignorance not only of antiseptic medicine, but of the true character and pathology of typhoid fever. Thus one savant added superciliously

and blusteringly to his previous remarks: "He claims that the temperature has gone to normal in four or five days after intestinal hæmorrhage. Absurd; what could he do for the ulceration of the bowels?" As if the ulceration of Peyer's glands were the cause of the elevation of temperature. Absurd; and as a climax and final adjustment of the subject said, sententiously: "Talk of aborting typhoid fever; impossible." To me and to those who have with ease, confidence and tranquility aborted the disease, these infelicitous comments are "*absurd*" *indeed.*

A latter day Sydenham, gifted with peculiar perspicucity, selected three charts as looking to him very much like the records of the temperature in cases of malarial fever. The fact of the matter is, that his extraordinary clear sightedness availed him nothing, for he had, unluckily for himself, chosen the charts of three cases of typhoid fever, which occurred during two epidemics.

The patients had been examined and the diagnoses verified, by no less than six different physicians, at the bedside; and no doubt was expressed at the time as to the character of the disease. It is hardly conceivable how so grievous a mishap could have befallen the critic, for the thermic lines on the charts did not delineate the rise and fall of the temperature of malarial fever, a blunder inexcusable even in the most inexperienced medical man. The arguments thus adduced by notable professors, whose reputation for scholarship has heretofore been undisputed, have been puerile indeed, unworthy alike of the speaker, his auditors, and the topic under discussion. It is hard to understand how a philosopher, so penetrating, so profound, could be so willfully blind, as not to have observed that at least fifty of these were the clinical charts

PLATE 3,

Showing intussusception which caused the death of Dr. Cunningham's case No. 3—James K.

of typhoid fever patients, each one of whom had been examined by from two to six different physicians, the diagnoses and results of treatment attested to, and all of these facts written on the face of the original charts which were signed by physicians whose integrity and expertness in diagnosis cannot be questioned.

But when these charts were criticised and when the fact that the temperature touched normal in seven or eight days, was said to be proof that these patients did not have typhoid fever, I knew that if the opportunity should ever present itself I would be able to demonstrate on the cadaver the truth of my statements. I little expected, however, that I would live to see a case of *aborted typhoid fever* in the dead house.

But here I present to you a temperature chart, kept at the bedside of the patient by the attending physician, Dr. M. V. Cunningham (Case, No. 3—see page 152), in which the temperature touched normal on the seventh day of treatment—the thirteenth day of the disease. And here I present to you both dried and moist specimens of the intestine of the same patient, showing the characteristic and extensive ulceration of Peyer's glands. Here is the intussusception which caused the death. Please open the bottles and investigate to your entire satisfaction. The bedside history and the pathological specimens prove conclusively that one case of typhoid fever was aborted. "Ab uno disce omnes." Thus this obscure colored man, dying, has rendered a greater service to the world than can her most distinguished citizen, living.

It is interesting to note that every adverse criticism of my theories, my management of disease or my conclusions, have come from those having no practical and

I fancy, very little theoretical knowledge of the subject; while those who have tested my methods have favored me with more valuable reports and kindly expressions of approval of the same than I have been able to transcribe or properly answer.

I append a few of them here; I presented others in my papers read before the Sections on Pediatrics and Practice, A. M. A., last week.

Dr. John McCurdy, one of the most distinguished physicians in the State of Ohio, many times President of his County Medical Society, ex-President of the Ohio State Medical Society, during the war was Regimental, Brigade and Division Surgeon, Assistant Medical Director and Acting Medical Inspector of the 14th Army Corps, has had 320 cases of typhoid fever under his care at one time; a firm believer in the idea that any limitation of the course of the disease in typhoid fever was impossible. In the County Medical Society, in 1880, he spoke eloquently against the acceptance of my theories, and in 1893, in the same society in which he had spoken thirteen years before, said: "Dr. Woodbridge has made the greatest discovery that has been made in medicine for a hundred years. I have treated typhoid fever by his method for several years and have aborted a large number of the sixty-five or seventy cases treated since 1890, although I have not been able to abort every case, and have had two or three deaths, these occurred, however, in cases that came under my care at the end of the second week of the disease or later. I know that this treatment has power to destroy the specific poison of typhoid fever, and if begun early will abort the disease. It is the best treatment I have ever seen advised." At a public banquet given to the Chamber of Commerce, at

which there were probably 300 guests present, Dr. McCurdy, responding to the toast, "The Medical Profession," said: "We claim that one of our number here is the discoverer of a treatment for that universal and justly dreaded disease, typhoid fever, which, as a rational and scientific plan of waging battle with that life destroyer, is far in advance of any treatment yet practiced. This treatment has stood the crucial test for years in hundreds of cases, and the theory is fully sustained by the long list of victories achieved."

Dr. C. R. Justice, the very able Health Officer of Poland, Ohio, and ex-member of the Pension Board, with whom I have had seventeen bedside consultations over cases of typhoid fever during the past year, had for years condemned my theories and denounced my position as "absolutely untenable," until I had learned to regard him as a devotee at the shrine of the "expectant method;" who would go on to the end of his professional career, treating the disease symptomatically; accepting the long weeks of sickness of his patients as something entirely beyond his control, and the deaths as visitations of Providence, for which he was in no way responsible. I was greatly surprised, therefore, to learn that he had been investigating the subject for months.

That he has continued his investigations to good purpose, is proven by the success he has secured in treating some very severe cases of typhoid fever (a few of the charts of which are submitted for your inspection), and by the fact that I was able to write to one of his brother practitioners, advising him to call Dr. Justice in consultation, as he had treated so many cases by my method that I felt perfectly safe in saying to the friends of his patients, that if they called him early enough they

need never fear that he would have a death from typhoid fever, or that any of his patients would be severely sick.

Your attention is especially invited to the clinical

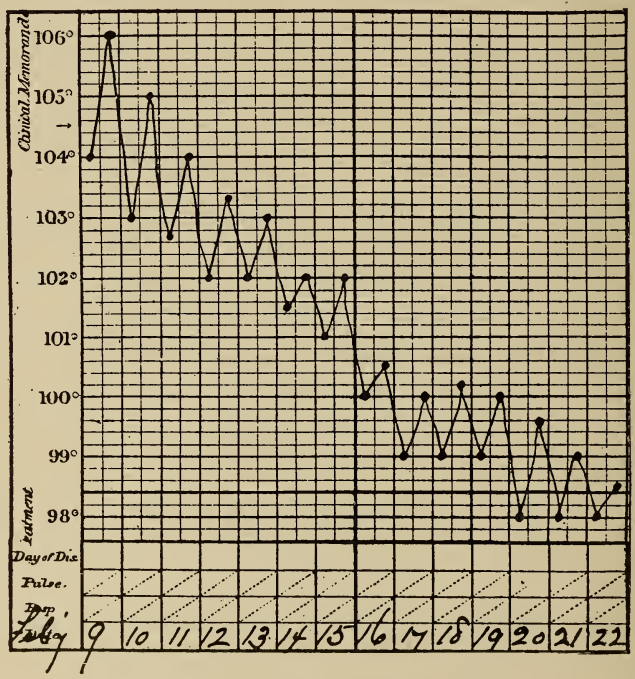


chart of case No. —, Lorenzo C., who had been under the care of two other physicians at a neighboring town. He had been sent home with the statement that he had a terribly severe attack of typhoid fever, and would necessarily be sick a long time. He arrived wildly delirious, with a temperature of 106°, and all other symptoms of the disease characteristic. His temperature touched normal on the eleventh day, and in a few days he was out driving, feeling perfectly well.

Dr. Justice has treated during the year, by my method, twenty-three cases, without a death; although

some of them have been complicated by grave pre-existing or concurrent affections, and some of them came under his care at late stages of the disease. In speaking of the treatment Dr. Justice said : "Looking back over the past I can see where I could have saved many lives, had I understood this method of managing typhoid fever as I do now ; and I think I would be committing a crime, were I to treat a case of the disease in any other way than that advised by Dr. Woodbridge."

Dr. J. A. Dickson, of Youngstown, O., a gentleman of the highest integrity, a physician whose reputation as a general practitioner, is happily not marred by his success as a laparotomist, sends me the following report:

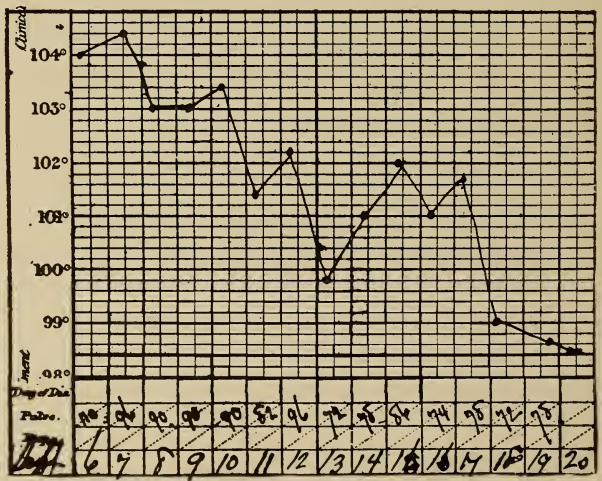
"YOUNGSTOWN, O., April 29, 1895.

"I have treated several cases of typhoid fever with Dr. Woodbridge's treatment, and find that it will invariably cut the fever short, if commenced early enough in the disease, the illness lasting often but a few days, the temperature soon dropping to normal and remaining there. I have also tried the mixed treatment, that is, using the tablets as directed, and also perhaps, some turpentine emulsion, quinine, etc., but find that it pays much better to 'hew to the line.' I have been recently treating a case of typhoid fever, which came to me from another physician, who was ill. It had not been treated by Dr. Woodbridge's method, and when I first saw the case I found the temperature 104°, the pulse 100. I immediately commenced with the tablets, giving one every fifteen minutes for the first day, one every half hour during the second day, and one every hour during the third day, etc. Upon the second day the temperature came down to 101.8°. Upon the third day it was 101.4°. Fourth day, 101.4°. Fifth day, 101.2°. Sixth day, 98.6°. After this the temperature remained normal for four days, when the patient came down with pneumonia, with the characteristic râles, egopheny hepatization and expectoration ; from which he is now recovering. The temperature upon the onset of the pneumonic trouble went up from normal to 101.8° the first day, and gradually to 103°, but the

tongue was moist and there were no symptoms of typhoid fever.

"If I were stricken with typhoid fever, or one of my family were taken down with the dread disease, I think that I would feel like sending for Dr. Woodbridge from the Atlantic Coast to the Golden Gate. J. A. Dickson."

There must be royal blood coursing through the veins of Dr. Reed, of Massillon, Ohio, for of such material as he is made, made they the kings and rulers of the earth in olden times. In one of the darkest hours in my existence he wrote me as follows:



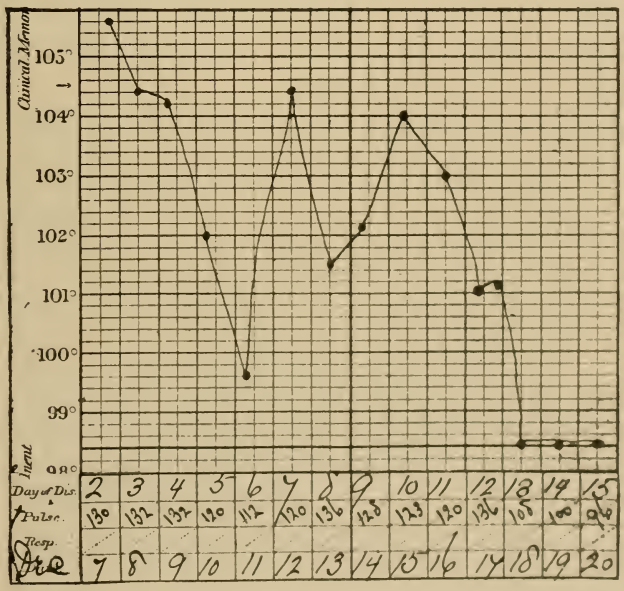
"Massillon, Ohio, Nov. 14, 1894.

J. E. Woodbridge, M. D.

Dear Doctor:—I wish to add a word of encouragement to you against the many denunciations of your treatment of typhoid fever. I wrote for your formula some time ago, and you referred me to the *American Medical Journal*, from which was obtained the required knowledge. My father, Dr. T. J. Reed, has also used it, and we have met with very good success, and can only offer words of praise in its favor.

We have been giving about 30 grains of quinine per day,

(this being a great malarial district) for four days, and if at the end of that time we found the temperature high, and the symptoms the same or aggravated, we put them on the treatment prepared under your formula, and although we have not aborted the disease in every case inside of ten days, we have, with the exception of two cases, inside of fourteen days, and seldom see them after the sixteenth day. I have kept diligently the charts of the cases I have had, and have taken pleasure in showing them to the other physicians, who laughed at my daring to use the treatment. They take a different view of it now though. Had I but known a few hours earlier of your intention to speak in Cleveland, I should have gone up, and let my voice help to defend you, or if not allowed that, at least it may have been some satisfaction to you to have seen the few charts (ten in all) we have been able to prepare.



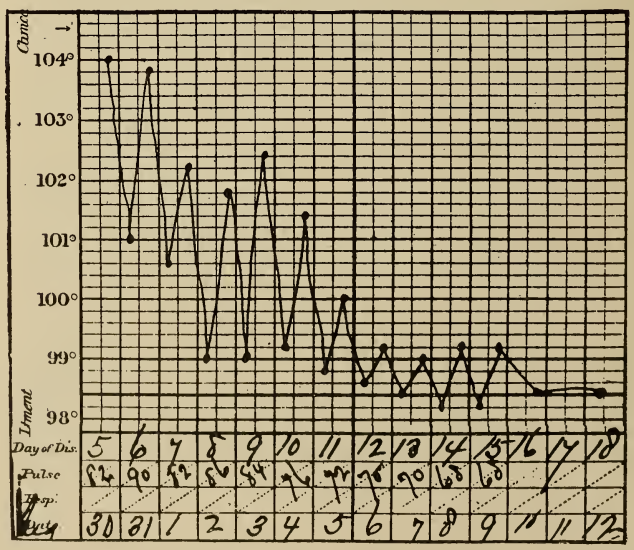
Hoping that you may meet with greater encouragement at the hands of the profession, and that I may be able to meet you personally at some future time, I remain

Yours truly, T. F. Reed."

A few days later Dr. Reed* kindly sent the charts to which his letter refers, to me with the accompanying letter:

"I send you by this mail, a few of my charts that were unmistakably typhoid fever cases, and some of them were the last cases of from two to four in the family, who had similar attacks, but of which I regret to say no records were kept. We have had, in all, about twenty-five cases, and these charts are examples of them all. We are well pleased with the results we have had, and can positively say that it is due to the form of treatment. I hope the charts will be of some use to you, and anything that I have is at your disposal. I should like to have the charts returned, as I have no duplicates of them, and want to keep them for future use. The temperatures marked were taken at the height of the disease."

Dr. E. J. March, of Canton, Ohio, sends me the following letter with the charts, which are marked "Dr. Marsh, Harry W. and Sadie J.":



*The denunciations to which Dr. Reed refers are those of physicians who denounce the abortive treatment of typhoid fever, without trial or investigation as they would disparage anything, which did not chance to fall within their intellectual horizon.

"CANTON, OHIO, April 26, 1895.

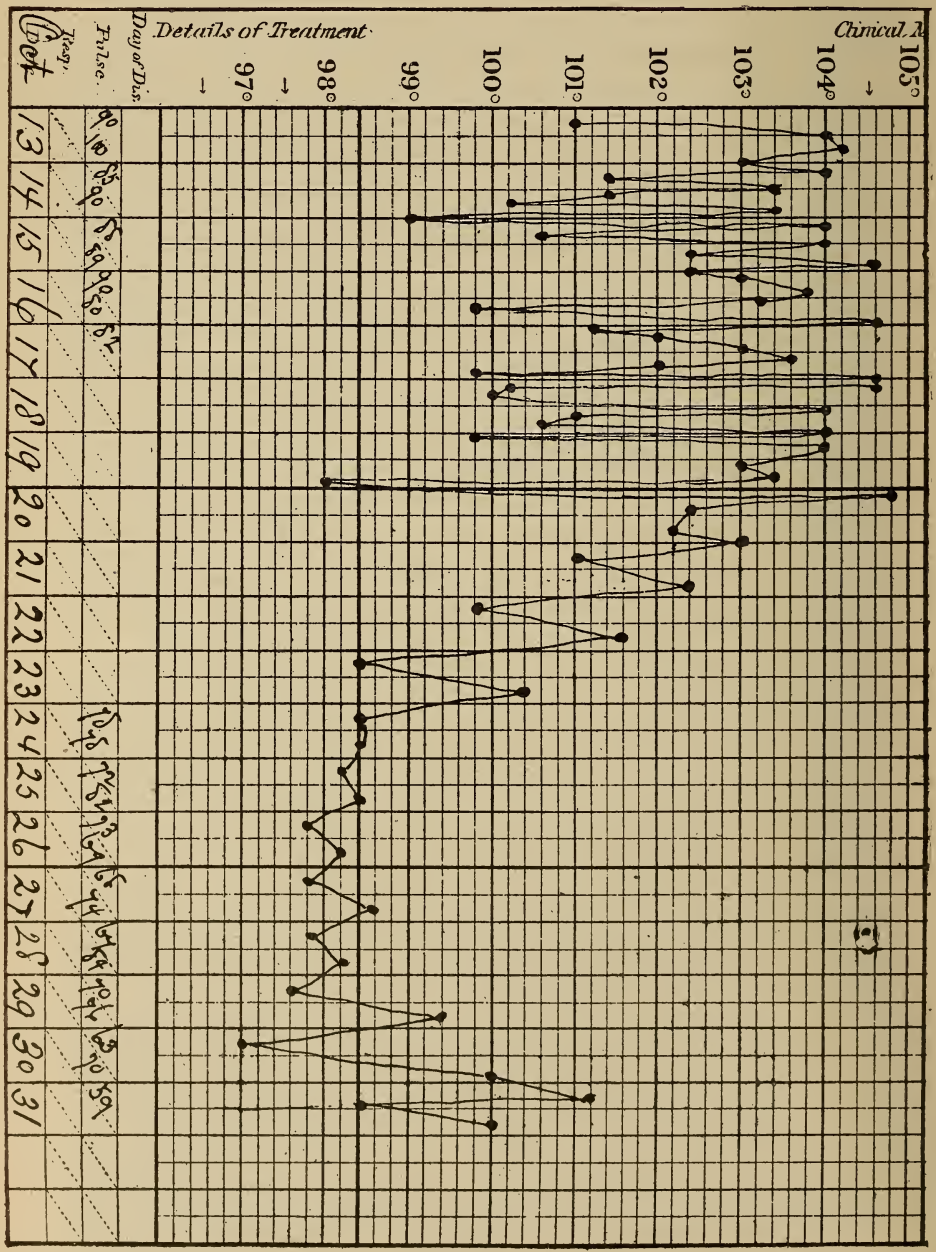
DR. J. E. WOODBRIDGE, YOUNGSTOWN, OHIO.

Dear Doctor:—An apology is due you for my long delay in giving the reports of some of the cases of typhoid fever which I have treated with the medicine you furnished so kindly. I have simply postponed it from time to time till this P. M. I saw a report of some of your cases in P. D. & Co.'s therapeutic notes.

Enclosed find the detailed treatment and temperature charts of two cases. The first of Mr. W. was to my mind a typical case. The second, Miss J., a trained nurse came from a family, all of whom had typical and severe attacks, at which place she contracted the disease. She came back to Canton and asked me to give her 'Woodbridge treatment', as she had nursed my first case, and was much taken with the results obtained in it. By the way, she had had large experience in New York hospitals in nursing typhoid. You will see the result as per charts enclosed. I had two other cases as well marked and typical as these two, but being in nonprofessional nurses' hands, no notes or charts were kept. But they were both convalescent in ten days' time. The one, a woman about thirty years old, had come from the bedside of her brother, who died from the disease, and she started in with a severe attack. I am sorry I did not keep such a record as I could, myself, so as to add water to your wheel. I have a friend here who has tried the plan of treatment, somewhat modified, and says that the objection he has to it is that, whereas he formerly made from $20 to $40 out of each case of typhoid, this cuts his bills down to less than $10 in each case.

Doctor, I feel sure that you are on the right track, and if we should have a run of fever in our hospital wards this fall, I will furnish you with some more charts and results. Thanking you again for your courtesy, Yours very truly E. J. MARCH."

I will now present from my own practice a few cases which ran a course similar to that of Dr. Cunningham's Case No. 3, with the exception of the unfortunate accident of the intussusception. The cases represent not only most careful and positive diagnoses from the clinician's standpoint, as they were generally verified by one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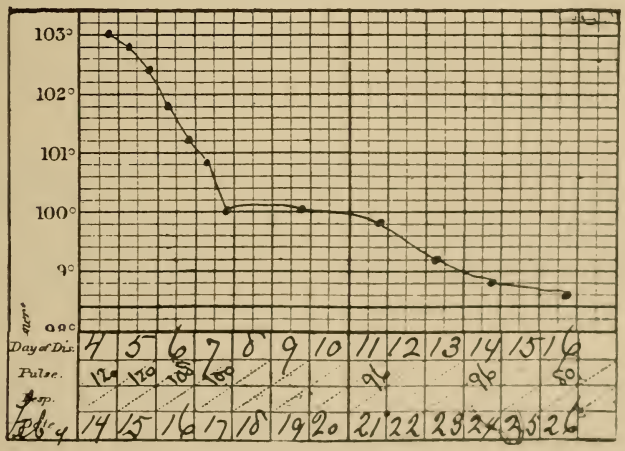
SADIE J.

or more physicians ; but every precaution has been taken to reduce errors of diagnosis to a minimum, by calling to my aid every known means of excluding mistakes. The diazo-reaction described by Ehrlich, and the microscope were appealed to, and in a large number of cases where malarial fever was suspected, or had been diagnosticated, careful search was made for Laveran's hematozoon.

Case No. 106. Mrs. McC., aged seventy years. Was a feeble woman, and one of five typical cases in one house. When I first saw her, on February 7, 1895, her temper-



CASE LENORE S. No. 101.

ature was 105°, pulse 140. Although she was reported to have been sick only five days, she was delirious ; her bowels were very tender ; there was considerable tympanitic distention ; rose spots were abundant ; her tongue was thickly coated, dry and brown. Her temperature, as you will see, had dropped to 99°, her pulse 96, on the 13th of February, after which her temperature was not taken ; and in a few days she was able to be about, and at the end of a week was out of doors.

Case No. 101. Lenore S., aged twenty-seven years

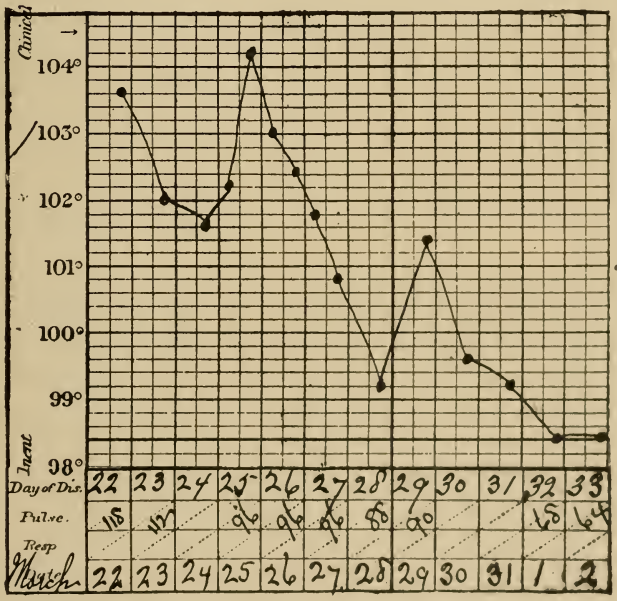
(daughter of Case No. 106, residing in same house). When I first saw her, on Jannary 14, 1895, she had a temperature of 103°, pulse 120, and all other symptoms of typhoid fever as characteristic as were those of her mother. A few days later, January 17, her temperature was 100°, her pulse 100, and the general condition so much improved that I have no record until the 21st, when the temperature had been reduced to 99.8° and the pulse 96. I saw her the last time on the 26th, and she was out in one week.

Case No. 108. Carolyn S., aged two years (daughter of Case No. 101). She was far from well on February 7, when I was called to see her grandmother, and on February 9 had a temperature of 105.2°. She was discharged, cured on February 16, after nine days of treatment.

Cases Nos. 107 and 109. Katie McC. and Jerry McC., aged respectively five years and twenty-three years (granddaughter and son of Case No. 106). These cases both showed decidedly characteristic symptoms of the disease, but recovered so rapidly that no records were kept.

Case No. 115. John O'L., aged twenty-eight years. This young man was taken sick on the 1st of March and was treated by an irregular practitioner who called two other physicians in consultation after twenty-two days of illness, during which time (according to the statement of the family) a diagnosis was made of la grippe, malaria, pneumonia, and finally of pneumonia with "typhoid malaria." On the 22d of March an unfavorable prognosis was given and I was sent for. I found a typical case of typhoid fever, complicated with pneumonia. His temperature was 103°; pulse 118, and dicrotic; condition of nervous system very bad; he was sleepless and delirious; his abdomen was covered with rose spots; typanitic distention enormous; bowels very tender; tongue very dry, brown and cracked; he was

spitting blood and had three intestinal hæmorrhages. On the 25th of March his temperature was 104.7°. However, his condition improved rapidly indeed; he was sleeping naturally, without hypnotics, on the second night, when he was no longer delirious. Within three days, his abdomen flattened out; the tympanitis disappeared; his appetite returned, and he declared that he was gaining strength on milk diet. On the 1st of April and the following day, the temperature being normal, he was dis-



CASE MARY O'L. No. 120.

charged cured. Dr. M. V. Cunningham, who is much interested in the abortive treatment of typhoid fever, saw the case with me, for the purpose of watching the effect of treatment. He pronounced it wonderful.

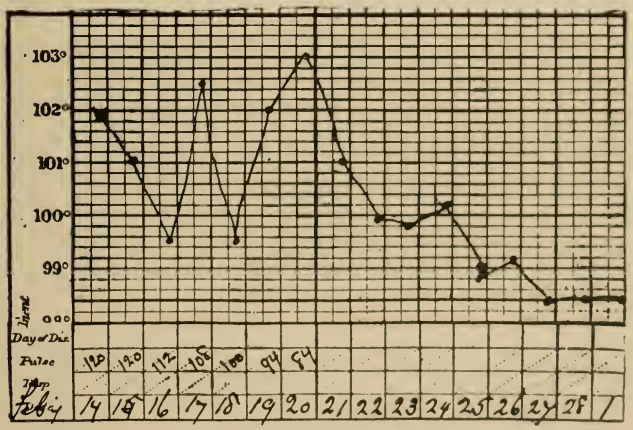
Case No. 120. Mary O'L. (sister of Case No. 115, John O'L.) I was called to see this case on the 24th of April, and was given the following history: She had

nursed her brother through a very severe attack of the fever a month before. During the latter part of his illness she had severe headache and general malaise. About two weeks before I saw her, her headache increased, her back and limbs ached, she became dull and apathetic, and as her mother expressed it, "could hardly drag one foot after the other, she, who was the most active and energetic of all the kith and kin." At this time she took the residue of the medicine I had left for another sister, whom I supposed was taking typhoid fever (from which illness she recovered at once) after which she felt quite well for several days. Six days before my first visit the headache returned, the back and limbs began to ache, and all the characteristic symptoms of typhoid fever presented themselves; her pulse was 120, her temperature 104.9°; her tongue heavily coated; spleen enlarged; her bowels very tender and tympanitic. I left her in the care of Dr. M. V. Cunningham, on the ninth day of treatment, when I started to attend the meeting of the A. M. A. at Baltimore. During my absence she had a very severe intestinal hæmorrhage, but made a good recovery. While Dr. Cunningham was making his daily visits, a married sister was taken sick with the fever and proper treatment was instituted early, so that the temperature never rose above 103.5°, and on the seventh day, when she was doing very well, her husband came home drunk and brought with him an irregular practitioner, who very promptly decided that she had no fever. It was very fortunate for his reputation that he was called in after Dr. Cunningham had aborted the disease.

Case No. 116. E. S., aged forty years (husband of Case No. 84.) This patient resides about four miles from my office and he drove that distance to see me about one o'clock each day. He consulted me first on the 1st of April, when I found his temperature was 100° and pulse 112. Although feeling at times miserable he was able to be out each day, as I had advised him, and

on the 15th his temperature was 99.4° and pulse 80, and his recovery was excellent.

Case No. 114. Mrs. Michael J., aged thirty-two years. This was the fourth case of typhoid fever in the same house at once (the three other cases were reported in the paper which I read in the Section on Pediatrics, A. M. A., in Baltimore). A small son, Case No. 78, John J., and a little niece, Case No. 105. Annie W. having also had the disease some time before. The symptoms were not well defined and an absolutely positive diagnosis was not possible, but as the family used water from a well which was supposed to be the source from which several other cases had originated, she was treated as a case of typhoid fever and assured that if the diagnosis were correct she would not be confined to her bed or be long sick or too sick to nurse her three children, who had the disease, as I had been able to treat her from the beginning of her indisposition.



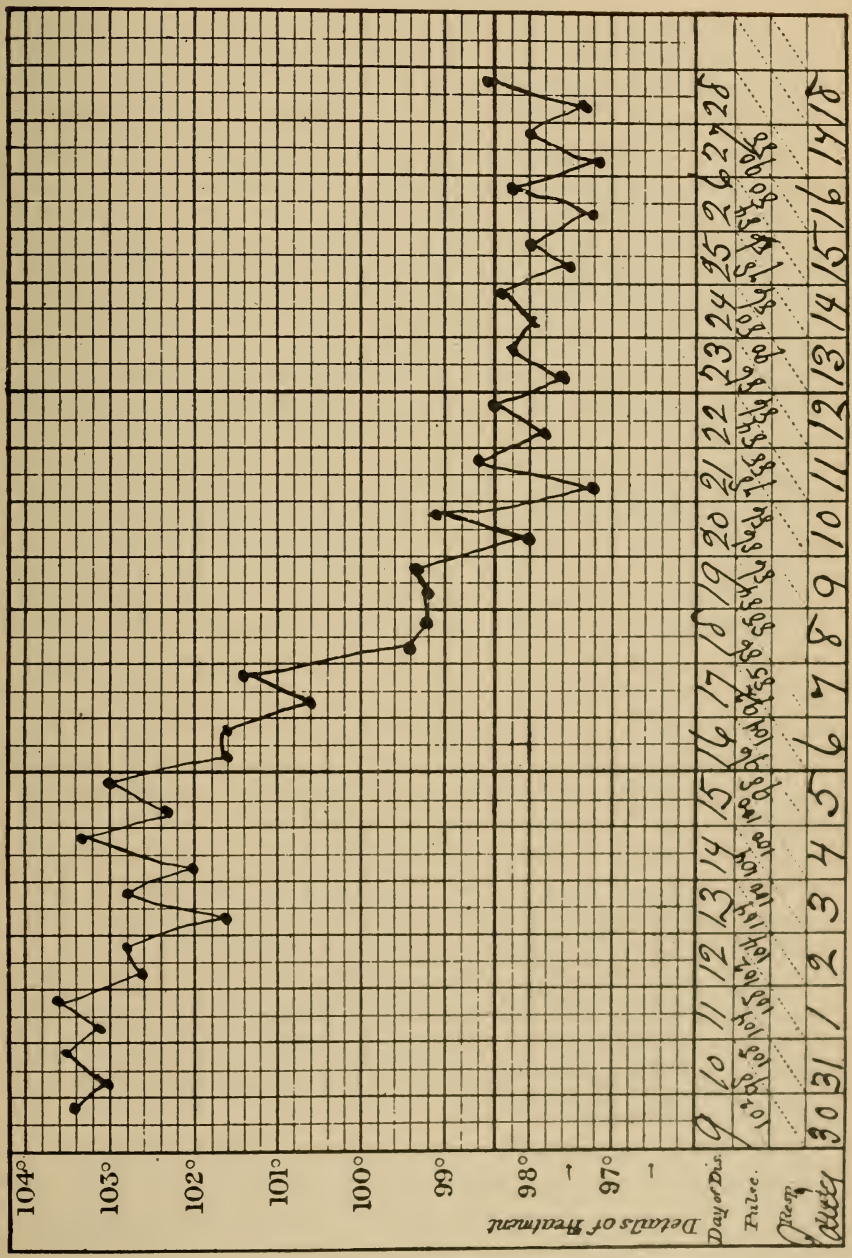
CASE FRANK S. No. 110.

Case No. 110. Frank S. This was an ambulatory case, and although the symptoms seemed to indicate that the patient was growing worse, his temperature being 103° on the sixth day of treatment, he felt fairly well after the first two or three days.

Case No. 118. John S. This case showed premonitory symptoms of typhoid fever for more than a week before the patient consulted me. He drove to my office for a few days, with all of the marked characteristics of the disease plainly to be seen, but finally had to go to bed for a week or more. The temperature ranged from 100° to 102.8° for eight days, and he was discharged cured on the twelfth day.

Case No. 117. George J., aged fourteen years. He came to my office on the 14th day of April, and called daily for four or five days, when his afternoon temperature was only 101°, but his other symptoms were sufficiently characteristic to justify a diagnosis of typhoid fever. I soon discovered that he was not doing well, and warned him of the danger of neglecting to follow implicitly my instructions. After which he improved for a few days, but again grew worse. Sending for his father, I learned that he had been left to take his medicine or not, as he chose; and choosing the latter, he had been casting the expensive medicine which I gave him into the cuspidor. I refused to have anything more to do with him, unless he was properly nursed, when his mother gave up her situation and gave him her care; but more than two weeks had now passed, and instead of being well, as he should have been, his symptoms were all aggravated; his pulse 136; temperature, 103 2-5°; the tympanitic distention of the abdomen was enormous, and his bowels were very tender and painful.

Leaving him under the care of Dr. Cunningham I went to Baltimore, and returning on the 13th of May, the Doctor requested me to see him, saying that he was unable to control him. On several occasions he had stolen out of bed and secured bread and other articles of solid food and once he was said to have eaten a pound of candy. I ordered him to be handcuffed to the bed, where he still remains, but is nearly well.



CASE ELLEN H. No. 104.

Case No. 104. Miss Ellen H., aged twenty years, residing in a neighboring town; she had been sick ten days, under the care of the family physician, who, being one of those gentlemen who do not believe in the possibility of aborting typhoid fever, very naturally blundered in his diagnosis, and treated her for la grippe, until about four days before I was called. At this time he corrected his diagnosis to typhoid fever, which caused no little excitement, as the other most prominent physician in the town was, and is, an enthusiastic advocate of the "Woodbridge method," (he says publicly that no patient should die of typhoid fever.) Thus the friends of scientific medicine and the friends of "old fogyism," became partisans; and for days that young lady's mother, in her anxiety to save her daughter from death or needless suffering, was swayed from side to side. It would be hard to tell which party would have won, had not the condition of the patient become alarming; for, although the Doctor was keeping the temperature down nicely with acetanilid and sponge baths, and was sustaining the heart with strychnine and digitalis, her mother could see that all was not right, and she, at last, telephoned to me to come down and meet the attending physician in consultation. I found both physician and friends exceedingly anxious about a "failing heart," a threatening danger which I assured them would disappear as soon as a little of the poison of the disease was neutralized. I discontinued all heart tonics and stimulants, and all medicine in fact, except the three prescriptions which I have advised in former papers; and before I made my next visit, the following afternoon, all the ill-omened heart symptoms had vanished and the pulse had resumed a healthy tone. In two or three days, all of the nervous symptoms, all of the tympanitis, all of the abdominal tenderness were gone, never to return, and she was very comfortably sick, although, as you will see by the chart, the temperature did not touch normal until the eleventh day.

In conclusion, I wish to say, that an apology is due the large number of physicians who have reported cases of typhoid fever treated and aborted by the "Woodbridge

method," which I have been unable to reproduce here or in my previous papers, for want of time, an unintentional discourtesy, since the twenty minutes which are allowed me in the medical societies, or the space in the "journal" would have been wholly inadequate to admit of even the briefest possible mention of all the valuable and valued reports in my possession. But every case reported is an object lesson to those who doubt the possibility of aborting typhoid fever, and each individual account will aid in hastening the day when death or long or severe illness will be unknown. Hence the medical profession is to be congratulated that it has in its ranks, proficient and practiced men, whose finesse and savoir-faire enables them to learn the truth, and whose manliness endows them with the courage and valor to teach it.

REPORTS ON TYPHOID FEVER.*

(CONTINUED.)

When I first publicly declared that "death is a wholly unnecessary consequence of typhoid fever, and that every case in which proper treatment is instituted sufficiently early in the course of the disease can be aborted," I stated also that "I fully appreciated the disgrace and ignominy which would await me" should I be found guilty of promulgating a false doctrine.

I knew that I was speaking a language which would be utterly unintelligible to the greatest thinkers in the profession; and also that it would have been so to me, but for the *eclaircissement* of many years' experience. As it took so much evidence to convince me—first, that any case of typhoid fever could be aborted; then, that any severe case could be aborted; and finally, that every case could be aborted, and death from the disease could be always averted, I cannot understand how, without the most indisputable and undeniable proof, these claims can be admitted by any physician, who had been taught as I was in my youth, to regard typhoid fever as a "specific infection," possessed of some occult power of resistance to all curative treatment, which it was hopeless, if not flagitious, to attempt to counteract, and a completion of the title of "quack" to make any pretension to having succeeded in so doing.

*Read before the Section on Practice, A. M. A., Baltimore, Md.

I shall, therefore, endeavor in this report to present the strongest available evidence, not only that the declaration is true, but that which for want of a better name I have designated "Antiseptic Medicine," has a reserve power for good that I have not even mentioned. For this purpose I wish to reproduce the verdict of a few of the many physicians who have treated by my method a large number of cases of typhoid fever, and also to note some of the most characteristic or otherwise interesting cases which I have treated since our last meeting.

Desiring to give every facility for the formation of a just estimate of the value of my statistics, I have invited the closest scrutiny of my cases of typhoid fever; have ever held myself in readiness to demonstrate the correctness of my theories, in hospital or in private practice, at home or abroad; and I have requested the publication of any failure on my part to do all that I have been teaching the medical profession that it ought to do. I have also promised to present a report of cases before some great medical society each year, until a general assent has been given to the accuracy and truth of my theories, and death from typhoid fever is unkown, and long continued, constitution destroying sickness from the disease shall be regarded as a disgrace to the individual practitioner, and not as at present a reproach to the great body of the medical profession.

During the past year, as during the preceding thirteen years, I have had no death from typhoid, malarial, or any continued fever, or following any pathological condition, which could by any possibility be mistaken for either of them, and I have failed in no instance, in which the patient has come under my care before the eighth day of sickness, to abort the disease.

Since my return from San Francisco, last July, I have treated, alone or in consultation, fifty-eight well-marked cases of typhoid fever. Of these cases some occurred in Youngstown, or the surrounding country or towns; some in Pennsylvania; some in Northern Ohio, and some in other States; and no doubt existed in any instance, in the minds of the attending or consulting physicians, as to the correctness of the diagnosis. I have, during the same time, aborted the disease in a large number of cases, of which no charts were preserved.

During this period there have been reported to me as treated by other physicians, acting under my advice given orally, in consultation at the bedside, by letter or otherwise, about 800 cases of typhoid fever, with nine deaths from the disease. A marvelously good result when it is remembered that they were sailing on an unknown sea, with no pilot to steer the course; that they had unshipped the rudders, thrown overboard the compasses and were endeavoring to weather, unaided, the fiercest storm that could ever strike the ship—having learned that all recognized methods of treating typhoid fever are so valueless that the cleverest men deny the possibility of doing what 117 physicians have done, viz.: curing the disease. They abandoned all the procedures with which they were familiar and with only a brief outline of my *modus operandi*, which must necessarily have proven a quite insufficient guide; yet there were enough earnest and conscientious physicians, whose keen insight and mother wit enabled them to follow these rather incomplete directions to a successful issue, in so many typical cases of typhoid fever, as to afford me conclusive evidence that the disease can invariably be aborted and every life saved; and which should also carry conviction

to the mind of any intelligent physician who will carefully and impartially weigh these reports and also my fuller treatises on the subject.

While neither these accounts nor my own observations have added anything to my knowledge of the power of this so-called "antiseptic medicine" to abort typhoid fever, when the treatment is commenced early in the course of the disease, they have served to convince me that in my original declaration I did not place too high an estimate on its value. They have done more—they have strengthened in my mind the belief that even in *late* stages of uncomplicated typhoid fever it has power to eliminate all ordinary causes of death, save the accidents of hæmorrhage and perforation, and to minimize the danger of their occurrence.

An analysis of the failures in a test of any given method is sometimes more instructive than an equal number of successes would be; and as that happens to be quite true in this instance, the following abstract of cases of typhoid fever, coming, as they do, from disinterested observers, may possess for this reason a higher import than would the report of a much larger number of universally successful cases from my own practice.

In one large hospital, in which the observer held an honorable position under the Government of the United States, several exceedingly serious cases of typhoid fever were aborted by the "Woodbridge method;" but finally a death occurred, for which catastrophe I could find no excuse, until I discovered that the patient had taken at three-hour intervals the extremely minute dose which I had advised to be given every fifteen minutes.

An instance of the lack of that discernment so requisite in securing success in so difficult and delicate an

undertaking is well pictured in the following quotation taken from the epistle of an apparently conscientious, just and high-minded gentleman :

The patient had been sick several days; had a morbid appetite; complained of being "so tired," chilly, headache, etc. . . . before consulting a physician. I gave him a simple laxative pill, containing colocynth, podophyllin, aloes, etc., which had a tremendous effect, so much so that I had to interfere with remedies. His temperature rose to 104½°. I pushed large doses of quinine upon him, and for two days the fever stayed away, and he got up and walked about the place. This was against my orders and he was soon compelled to go to bed. . . . Real typhoid tongue, some tympanitis, high temperature. I commenced giving him guaiacol and eucalyptol, as recommended by you, but mixed with bismuth. . . . He was sponged freely; . . . given four ounces Walker's best whiskey. . . . He died that night at 11o'clock.

The writer closes this eight page account of his experiences with the "Woodbridge method" of treating typhoid fever with: "Now in this case your powder was not used—all your other suggestions were followed." Were they? The patient did not consult the doctor until he had been sick "several days," he was then given a "simple laxative pill, which produced a tremendous effect;" then "large doses of quinine were 'pushed' for two days," and finally he was given two of the ingredients of my formulas, but not those, which to his patient were a veritable "sine qua non," *i. e.*, "the play of Hamlet with Hamlet omitted."

Thus, in these illustrations, one can easily see that not only were the minutiæ of my instructions unmistaka-

bly disregarded and neglected ; but the chief essentials were likewise overlooked to such an extent that neither these deaths, nor others occurring under like circumstances, should be charged to the "Woodbridge treatment."

Dr. Dodge, of Michigan, has written me several letters, which I consider most valuable contributions to current medical literature, and which I am unfortunately prevented from giving in full for want of space in the Journal.

He says : "I have seen three fatal cases this year, but none of them were uncomplicated cases, though I presume none of them would have died, had it not been for the typhoid element. One case was admitted to the hospital in the second week, as near as we could ascertain. He said he had been sick two weeks ; and he had a temperature of 104½° when admitted. We gave him your formula No. 1, until free catharsis was produced ; then the guaiacol and eucalyptol combination in gradually increasing dosage, until he took 5 m. of g., and 10 m. of e. every two hours. His temperature came down to nearly normal in a few days ; he had severe diarrhœa, and pain in the abdomen ; became wildly delirious ; then comotose, and died about ten days after admission. An autopsy revealed a great many ulcerated Peyer's patches and a general enteritis as well. The next fatal case was also admitted in the second or third week. It was impossible to learn just how long he had been sick. He also had pneumonia when admitted, and in the course of a week succumbed to the two diseases. Autopsy showed ulcerated Peyer's patches in abundance. He was given the same treatment as the other case, in the same manner, with the addition of appropriate medication for the pneumonic complication. The third case I saw in consultation, and was in the private practice of Dr. B. The young man had been sick two weeks when Dr. B. was

called, and had been starved by a quack who 'starves fever.' He was reduced, and had a hæmorrhage the day Dr. B. was called. I have had five other cases that have recovered. Two of them were aborted in the proper sense of the term, and in three, where the treatment was commenced about the tenth day, I am satisfied that the course of the disease was modified for the better. I have never before attended cases of equal severity that passed through the disease, and made so nice a convalescence as did these three cases.

"Two cases (and they were the only two in which I was able to commence the treatment during the first week of illness) were certainly aborted.

"One of them lived in a neighboring town. I visited him first one evening, and found that he had been sick four days and had a temperature of 103°. I gave him 40 grains of quinine to be taken during twelve hours. The next night he had a temperature 103½°. I placed him on the powder in half hour doses for 24 hours, then 3 m. doses of guaiacol and 6 m. doses of eucalyptol every three hours. I did not see him for 48 hours, when he had a temperature of 100°. I did not see him at all after that, but he continued the g. and e. mixture steadily, and a week later came to my office when he had a temperature of 100° or a little less, and had an abundant rose eruption over the abdomen. I ordered him to continue the mixture as long as he had any fever, and I have not seen him since.

"The other case simply had fever that did not yield to quinine, but was aborted speedily by your treatment. Some might deny this case being one of typhoid fever as there were no pathognomonic symptoms, but, at any rate, she had some kind of fever attended with diarrhœa and epistaxis. Quinine had no effect on the temperature, even in large doses, and the fever disappeared two days after the guaiacol mixture was commenced. . . . I think the system may be so impoverished by the toxins absorbed in the blood that no treatment will avail to

save the life of the patient, and the three fatal cases I have described may be considered as evidence supporting this position. I have, however, great faith in the treatment when it can be commenced early, even in the second week I think it will generally very favorably modify the course of the disease."

An extract from another letter from Dr. Dodge, dated the 2d of April, 1895, is as follows:

"All of the cases of uncomplicated typhoid fever that I treated in this manner recovered in a much shorter time than such cases have ever done with me before. The two hospital cases that died were complicated, the one with pneumonia and the other with severe enteritis, as the autopsy disclosed. The fatal case that I saw in consultation with Dr. B——, should not properly be included in your list as he had been 'starved' by a homœopath for two weeks and had a profuse hemorrhage from the bowels before Dr. B—— was called. He died within forty-eight hours of the time I saw him, and, of course, there was no time to get him under the influence of your medicine. Our efforts were principally directed to stimulation, and to try to get him out of the state of collapse. Incidentally your formulas were administered, but without any idea that it was a fair case to try them in. I merely reported it to you as an instance of the terrible condition in which we sometimes receive these cases.

"I also rather wished to warn you to dwell upon the necessity of giving your treatment early in the course of the disease, which you have done in later papers. I found some who thought from reading your papers that you claimed any case might be cured, no matter in what stage the treatment was commenced. I was well aware that you had not claimed any such thing, but I desired to call your attention to the fact that some persons had drawn that inference."

Dr. C. N. Udell, of Iowa, wrote me on the 19th of

April, 1894, seeking an outline of my treatment for typhoid fever. This letter was answered in its turn on the 3d of July. On the 25th of August I received a letter, from which I quote the following :

"The first trial was with Case No. 1, Iva M., aged fourteen years. The enclosed chart will show you the range of the temperature. This was rather a grave case, with bad hygienic surroundings and poor nursing. I did not begin the antiseptic treatment until she had been sick nine days. She made a good recovery, but the case ran for some weeks and could not be called aborted.

"Case No. 2. Frank B., was sick a week when I was called, and I diagnosed typhoid fever. He had the usual prodromic symptoms, with all the phenomena of true typhoid following. I put him on your formula No. 1 and continued that most of the time. In one week he was about well.

"Case No. 3. Mrs. C., was employed as nurse for Case No. 1 in the latter part of her illness. She is now sick with typhoid, in rather a mild form, yet unmistakably typhoid fever. I think from the present indications she will run the course in about fourteen days. Treatment—Formula 1 is given most of the time; No. 3 when the bowels are too loose. I have been using the same treatment in cholera infantum with good results. I have procured what I supposed to be pure guaiacol and eucalyptol, but find it difficult to give this to children, the taste is so horribly bad. Some children strangle badly on it even in small doses. I begin to fear impurity. I believe your theory is correct."

Dr. Udell sent me on the 22d of March another report of cases. He says : "I will give a brief report of cases, selected from amongst those treated with your abortive treatment for typhoid fever. In the management of

these, as well as other cases, I relied almost wholly upon your prescriptions Nos. 1 and 3, giving a diuretic occasionally when required ; also an occasional dose of bromidia, when the patient was too restless to sleep at night.

"Case No. 4. A. D., male, aged forty-two years. Suffered with all the prodromata of typhoid fever for six days, without treatment, with the exception of some domestic remedy. I prescribed R. No. 1 for three days ; No. 3 for four days ; and No. 2 on fourth day. Patient was discharged on the seventh day, with No. 3 to be continued at intervals of four or five hours for a few days. No relapse. Highest temperature in either of the above cases was 103.4°. No delirium or eruption.

"Case No. 5. J. C., aged eighteen years. Taken just as Case No. 4 was, with feelings of weariness, lassitude, constant headache, fever, rigors, foul furred tongue, anorexia, slight nausea, nosebleed ; some diarrhœa and tympanitis and tenderness over the abdomen. I was called after the patient had been sick one week and found that he had taken some cathartic pills. Prescribed R. No. 1 for three days, No. 2 on the third day. No. 3 for one week, when the young man began to do light work. No relapse.

Case No. 6. W. C., aged twenty years, (brother of Case No. 5). Symptoms much the same, so he was treated the same way as was his brother. No further treatment needed after six days.

Case No. 8. D. B., male, aged twenty-one years, (brother of Case No. 7) taken with the usual premonitory symptoms of typhoid fever. Had taken some cathartic pills on his own notion. I gave him Nos. 1 and 2 and then No. 3 for five days and he was well and able to do light work on the farm. I let him eat anything and all he wanted.

Case No. 12. Ellen B., female, aged forty-four years. Had been sick for three weeks with typhoid fever, under the

care of another physician. The family and doctor were alarmed and were looking for perforation, or fatal hæmorrhage. I advised R. No. 1 every half hour for one day, then No. 3 every hour unless the patient was resting well. Gave bromidia at night if patient did not sleep. Improvement from the first dose of medicine. Patient sat up in bed on fourth day of my treatment and was doing some of her own housework in two weeks. I insisted upon this patient eating proper food regularly after the first week. Recovery complete.

Case No. 13. Ef. R., female, aged twenty-three years. Was taken with chills, fever; had headache; backache; dyspnœa; nosebleed; anorexia; very dark, strong urine; a little blood passed from the bowel. Temperature soon ran to 104.4° F. I prescribed R. No. 1 with frequent alkaline sponge baths and flushing of the colon every day with an alkaline wash. After two days, I left R. No. 3, but the patient would not take it to do much good. Gave very small doses with sugar of milk, and was compelled to continue very small doses of No. 3. Patient was up and walked to the dining-room on the fourteenth day. Took a relapse, and was confined to her room for ten days longer. Continued R. No. 3 in small doses. Patient made a good recovery, but was somewhat fastidious about taking medicine, and of course I could not call this an aborted case.

"Thus I have given a brief sketch of such cases as would be a fair sample of those treated with the 'Woodbridge prescriptions.' The cases I failed to render abortive, were those who had endeavored to treat themselves for one or more weeks, or those in which my directions were not carried out according to orders. The one fatal case was doubtless beyond all earthly help when I was called."

On the 13th of August, 1894, I replied to a letter of Dr. H. G. Chritzman, of Pennsylvania, giving a detailed account of my method of treating typhoid fever.

He wrote me on the 20th of December, 1894, a letter, from which I make the following excerpta :

"I have had eighteen cases of typhoid fever this summer and fall. My last case was discharged well last week. In none of these cases was there intestinal hæmorrhage, except the first, which I reported to you, and none have died.

"The most of these cases were not wanting in virulency. I have charts of most of them, and the number of days under treatment was from fifteen to twenty-four.

"I find also that many of my patients had the disease a week or more before coming under my care. I cannot agree with you in reference to the question of giving patients solid food.* Temperature under your method of treatment often becomes normal before the ulcers are healed. Care, therefore, should be used in the administration of solid food. I believe a perfectly clean and normal tongue is the indication for solid food. I found guaiacol exerts no disturbing influence on any organ, except in a few cases. An irritable stomach rejected it, and those cases gave a little trouble for a while. I believe your antiseptic treatment is the rational treatment for typhoid fever. Under its influence the course of the disease is greatly modified; tympanitis is prevented, the tongue remains moist throughout the illness; delirium is rare and the intestinal tract is placed in the best possible condition for the healing of the wounds. I am certainly thankful that I discovered your articles in the 'Journal' "

*The doctor has misunderstood me. I have never advised physicians to allow typhoid fever patients "solid food."

I quote the following letter from Dr. Balmer, also of Pennsylvania :

"I have treated a number of cases of typhoid fever this summer by your method with remarkable success, and will endeavor to copy the temperature charts and send them to you soon. I presented these cases and the method of treatment before The Jefferson County Pennsylvania Medical Society at the last meeting, and I had introduced it previously orally in the society, and to individual members. Dr. S. M. Free, of Du Bois, Pa., one of our members, is very enthusiastic; also Dr. J. J. Brewer, of Clarington, Pa., who treated a number of patients by the method at my suggestion."

I very soon received a letter from Dr. S. M. Free, dated the 26th of December, 1894 : "I have used your plan of treatment in a few cases of typhoid fever. It is the best I have ever employed. I have tracings and fairly complete notes of my cases, and I am having my assistant make copies, which I shall take pleasure in sending to you as soon as completed. I trust that they may be of some service to you, for I am under great obligations to you for your great kindness to me. I am thinking of preparing a paper for presentation to our West Branch Medical Society on your plan of treatment, and will exhibit my charts and notes. Do you object to such a procedure? I feel sure that the more we can induce to use the treatment, the less will be the mortality in typhoid fever."

A quotation from a letter from Dr. H. K. Meyers, of Indiana, dated the 6th of January, 1895, is as follows : "I carefully tried your mode of treatment in three well-marked cases of typhoid fever, in the past few months, and was well pleased with it. Case No. 1. Girl, aged

fourteen years. Very poor ; surroundings bad ; parents as ignorant as they were poor, yet willing to do as I directed. Temperature was from 104° to 105.2° F. ; bowels tympanitic, and very tender ; rose spots ; tongue literally dried up, and with red edges. During the first three days the nose bled almost constantly. I tried to carry out your treatment to the letter, and I think I succeeded, as near as any one can carry out another's ideas. The temperature was normal on the eleventh day ; she made an excellent recovery. I should have stated that she had been sick a week before I was called in. The other two cases were treated in the same manner, and made good recoveries. While my success in treating typhoid fever has been fair in the past, the fever was always protracted and tedious. I think your treatment is correct in principle, and is bound to succeed."

Dr. W. N. Sherman, of Merced, California, wrote me August, 1894, asking for more definite rules for the management of typhoid fever than I had given in my papers. These directions were sent on the 13th of September and on the 29th he wrote me a letter from which I extract the following: "I have given your remedies in a modified form, in two cases, resulting in a normal temperature in both cases on the eighth day. I am highly pleased thus far." Other letters followed reporting cases successfully treated, the last on the 6th of February, 1895, in which he says:

"I am greatly pleased to inform you that I succeeded in inducing my patient to take your remedy, and this third relapse is yielding to the treatment promptly. As the bowels were somewhat constipated, I first gave 5 grains of calomel, followed by mineral water and sul. magnesia. These failed to establish catharsis, and I gave 1 oz. of castor oil with turpentine. I started with your combination No. 1 and kept it

up all the time, and this morning (the sixth day) the temperature touched 98-8°, F. The patient has been able to sit up all the time and is cheerful and comfortable, a very marked contrast to the other attacks." In another letter he kindly says :

"You are at liberty at any time to use my name as one who has proved and practiced your treatment and believes it to be superior to all others."

Dr. G. Law, of Colorado, published a paper in the Denver *Medical Times* of December, 1894, from which I take the following extracts :

"Dr. John Eliot Woodbridge, of Youngstown, Ohio, read a paper on typhoid fever in the Section on Practice at the forty-fifth annual meeting of the American Medical Association, San Francisco, June 5-8, 1894. I was present and heard the paper. . . . On looking over the action of the drugs named by Dr. W., I came to the conclusion that the carb. of guaiacol was the central and efficient agent, if there were any efficiency in the prescription. . . . Hence I framed a formula for myself. . . . From the 25th day of July up to to-day, Nov. 23, I have treated thirty-five cases of typhoid fever without losing a single patient. I have not had a case in which the fever lasted beyond twenty days. I have had a number of cases where complete subsidence of fever had ensued at the end of fifteen days.

"Cases that started with a temperature of 104° F. in the afternoon, after about four days of this treatment showed usually an afternoon temperature of 102° F. and a morning temperature of 100° to 101° F., with some sweating, which usually occurred about midnight. Not one of the thirty-five cases ever had a dry tongue at any time ; not one of my cases manifested the slightest delirium. It was not necessary to give any of these patients anything for the purpose of securing sleep or rest. Not a single relapse occurred in the entire number treated.

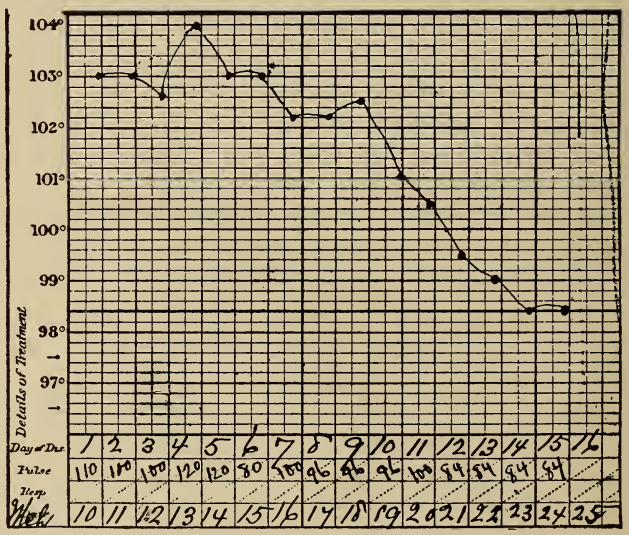
"The guaiacol compound was continued for one week after the total subsidence of the fever, but given every three, then four and, finally, every six hours.

"In none of the thirty-five cases was there noticeable meteorism, or the slightest hæmorrhage from the bowels. During the last twenty-four years I have seen and treated from twenty to fifty cases of typhoid fever each year. I never before treated thirty-five consecutive cases without losing a patient. I never before treated that number of consecutive cases without a relapse.

"Typhoid fever during the present year (1894) in our town has manifested about the usual characteristics, with about the usual mortality, in the hands of practitioners other than myself. I saw several fatal cases in consultation with other doctors, but I did not regard them as being suitable cases for the "Woodbridge method of treatment," as they were almost, if not quite, in *articulo mortis.*

"I am not sanguine of the value of this treatment if instituted late in the course of the disease, after the nerve centers have become profoundly poisoned by the fever toxin. I have made no secret of what I was doing with reference to my work to my colleagues in our city. However, only Dr. R. F. Graham seemed to attach any importance to it. He has been giving the matter some attention, and I thank him for his courtesy and will leave him free to speak for himself at his own elected time. I am aware that the bright and brilliant lights in the profession have scouted the idea of there being any efficiency in the plan of intestinal antisepsis, and I will admit that it has not hitherto happened to be markedly successful. But let me ask, is it not in line with the present trend of so-called rational, not to say scientific medicine. In conclusion, I am inclined to infer that either I have had a remarkable and continuous succession of mild cases, or the treatment on the lines of intestinal antisepsis that I have steadily pursued during the time indicated have been remarkably efficacious."

During the recent epidemic of typhoid fever at Lorain, Ohio. I was called there in consultation with Dr. J. F. McGarvey whom I found was treating the disease by my method so scientifically, and so successfully, that I knew that time would give the "Woodbridge method" at least one more warm advocate on the shores of Lake Erie. The evidence convinced him more promptly than I expected, and now every few days he sends me the clinical chart of a patient in whose case he has aborted the disease.



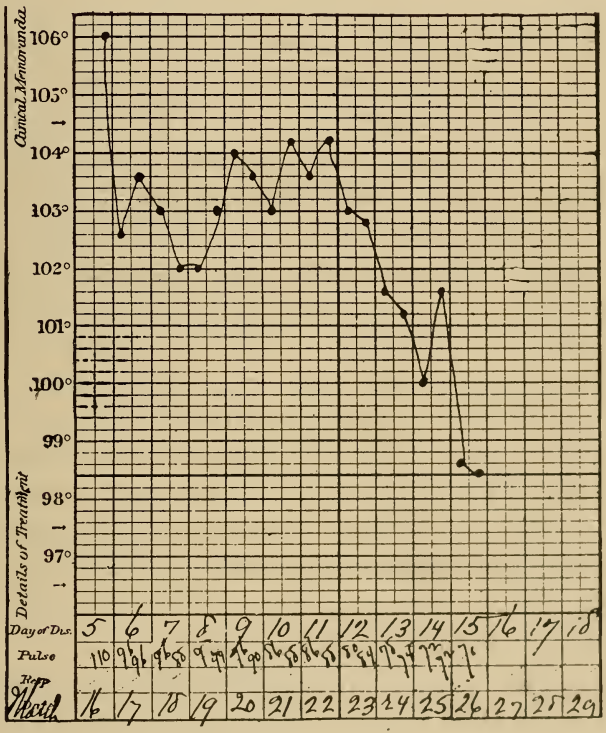
DR. McGARVEY'S CASE ARCHIE K.

Your attention is invited to his chart marked, "Dr. McGarvey's Case."

Dr. J. O. Yost, of Hazleton, Ohio, in whose family Dr. Bennett treated with me three cases of typhoid fever last autumn (see charts of Cases Nos. 92 and 96—of the third case no chart was kept) has contributed a chart of a re-

markable case, in which he reduced a temperature of 106° to normal in ten days, when he reports the patient around the house, covered with rose spots.

See Dr. Yost's case, marked Wm. McC.



Dr. Yost's Case.—William McC.: residence, Hazleton. Date of admission, March 16, 1895. Commenced "Dr. Woodbridge's abortive treatment" Sunday evening—the first day the patient thought the services of a physician necessary—he had been complaining for five days before. On the tenth day he was covered with rose spots, and about the house.

Dr. W. B. Shields, of Arkansas, under date of the 2d of October, 1894, says:

"I have for some time past been keenly interested in articles from your pen which have appeared in the Journal

of the A. M. A. in regard to treatment of typhoid fever. That you have struck the correct treatment, I am further convinced, not only by your own brilliant success, but by a very remarkable run on four cases which I treated in September, following your directions as nearly as possible. No one, it would seem to me, with intelligence would question the treatment after having tried it, especially with such testimonials as you have presented from those who cannot possibly be interested in your success. . . . I think as you say, that possibly your treatment could and may be improved upon in the future, but not materially changed, and it will have to be carried out on the same lines. . . . I was an Interne in the Memphis City Hospital nearly two years, and had a large opportunity of treating typhoid fever with ammonia salycil, but although it seemingly modified the disease, I have no recollection of one case being cut short. I have been in private practice for five years, and can't say that I have seen any better results than in hospital practice, my cases all running from three to five weeks. These four cases I am just through with, in two of them with morning temperature 102° evening temperature 104° and 105° several times in the first week, were free from fever at the end of the thirteenth day of treatment and fifteenth day of disease.

"One other case with evening temperature 103.5° and 104°, several times was free from fever on the fifteenth day of treatment and seventeenth day of disease.

"The last case had evening temperature of 104° and 105° several times, was free from fever on the seventeenth day of treatment and twentieth day of disease. This last case had such a bad attack, as to suffer with incontinence of feces for several days.

"All of these cases felt strong at the end of the fever, could walk around the house.

"With my limited experience in this treatment, I have to allow patients no solid food. I have used no coal tar derivatives whatever, but had my patients sponged off once or twice in the evening, on days when the fever was high. As you said, after two or three days of treatment their fever could be and was controlled by the antiseptics administered. I feel that with further experience in this line I can have as good results as you have. These few cases which I present, few in number but brilliant in results, convince me that you have struck the keynote and whilst begging your pardon for monopolizing your valuable time, I must return thanks for the great benefit I have seen result from your teachings."

Dr. C. I. Burt, of Iowa, wrote me on the 10th of December, saying:

"We are having an unusual epidemic of typhoid fever in our locality. I have at present some thirty-eight cases. Your antiseptic treatment was called favorably to my attention to-day by Dr. Wright, of Carroll, Iowa, and he suggested that I write you for reprints of your late articles on typhoid fever. Our source of contagion is such that the physicians of this town will yet have to contend with some hundred more cases."

Very soon after I received another letter (unfortunately mislaid) in which the doctor complained of his inability to secure the results I had promised, notwithstanding the fact that I had written him a long letter, giving him the fullest possible details of my method of procedure, but on the 22d of January, 1895, I received another letter from which I make the following extracts:

"I do not seem to get quite the promised result from the tablets, in the nature of producing effect, as

stated in a previous letter, but am now having better success, and I now push them to their limit. However, I have at all times followed very closely your directions, and must state that the effects have been wonderful. In no instance have I failed in relieving my patients within three weeks, and often in two. In that time, understand, some of them were sitting up, others moving about, and in a manner attending to their usual business. Many cases I commenced upon when the fever reached the 103° and 104° point. Of course, they had no serious intestinal lesion. However, when I discover the matter has passed to an intestinal infection I yet obtain splendid results.

"Now, this point is one to which I wish to call your attention. Leaving out the abortive fact of your treatment, what are your results after the case has progressed, even to hæmorrhage? I find, by pushing the treatment then as persistently as at any other time, that I obtain pleasant results, at least, a thorough intestinal disinfection, and in fact, a general better tone. Without doubt, Doctor, any one who uses your treatment, and as effectually as described by your directions, nothing but the most happy results will be the outcome. I have had several nurses from Omaha, and one recently from the Royal Infirmary from Dundee, Scotland, who is in this country for her health (they are all noted typhoid fever nurses), and let me tell you, they were absolutely paralyzed that a country doctor could produce such effects as they had never seen in Omaha, or any city. They think they will go home now, and treat typhoid fever on their own account. They say the only objection they have to this treatment is, that it cuts off their time in nursing. In every instance I prescribe the full bottle, without eras-

ing formula or attached notices. My nurses fully understand where the credit belongs."

Another letter from Dr. Burt, written on the 21st of March, 1895, says :

"I am still using your treatment and now obtain all the results that you claim. I have a patient—one case reinfected four times within 18 weeks—under my care the last five weeks and strictly under your treatment. I have avoided any high jumps of fever from 104° to 106°, as had previously been the case.

"My patient is now convalescent, but if I stop the treatment two days I note a rise of temperature, often from 103° to 104°. I am not experimenting further on this case, but rigidly keeping to the 'Woodbridge treatment,' and the happiest results follow. I note that you are to defend yourself. . . . It does not seem to me that one ought to produce a defense in the line of argument; if any of the gentlemen will permit themselves to follow out your instructions and use your treatment there would be no need of argument; they would all coincide with your views. It is just as positive that typhoid fever can be aborted by your method as it is that it cannot be by any other treatment to my knowledge.

"I have had some sixty cases this winter, and there has been no mistake in the diagnosis, as our eminent local authorities have assisted me from time to time in the diagnosis. I note that some physicians criticise the fact that they can in no instance find the 'typhoid fever curve' in your records; were they to do this, after using the treatment a few days, the treatment then would be useless; the treatment is to prevent this curve. It does so, most satisfactorily.

"Most of my cases have been among the poorer

classes, and scarcely any attention was given other than the medicine. I have lost one case, but that was not under 'the Woodbridge treatment.'

"It may no doubt seem an exaggeration as to the number of cases I have had and the happy results, but every fact can be verified. I have not kept a presentable account of cases in children."

At the last 1894 meeting of the Mississippi Valley Medical Association, I had read my paper on "typhoid fever," and during its discussion, which occupied three hours, my theories had been assailed in a most vindictive manner. Learned professors and editors of medical journals had vied with each other in making ungentle speeches. He who declared most positively in his harangue the time-honored aphorism "Typhoid fever must run its course of four, five, six, or ten weeks or longer," was most loudly and emphatically cheered. Of all the more than three hundred members in attendance, not one voice was raised in behalf of the principle I have so earnestly promulgated, or to give the slighest countenance to the treatment which will ultimately save an hundred thousand lives annually in the United States alone. No man in all that assemblage dared or cared to say that "typhoid fever can be aborted" and to the end of the discussion I remained the single and lone defender of this great and fundamental truth that means so much to the human race. After the session adjourned, I was introduced to Dr. Dalton, of St. Louis, with whom I had had already some correspondence and who had written me (after having tested my method of applying antiseptic medicine to the treatment of typhoid fever) that he had been six years at the head of the great St. Louis City Hospital, through which 10,000 patients pass annually and he regretted that he had not then known of the "Woodbridge method." And Dr. Henry Clay Dalton

healed all the wounds which that three hours' debate had given me, when he said; "I am very sorry that I was not at hand when your paper was under discussion; I would have waited until those disputants had finished and then would have said; 'Gentlemen I would like to inquire how many of you have used Dr. Woodbridge's treatment of typhoid fever?' and when they admitted that not one of them had (as they would have to do), I would have said: 'That is about as I expected; you have been endeavoring to discuss a paper that you do not understand and a treatment you have never tried.' I have investigated this matter and know that the treatment will abort typhoid fever." Dr. Dalton has in various letters to me indicated his entire satisfaction with my therapeutic procedures, and has reported so many instances in which he has applied them, as to give assurance that the "abortive treatment of typhoid fever" in St. Louis is in a master's hands. Quotations from his last letter, written on the 25th of April, are as follows: "When I first tried your treatment for typhoid fever, I was a "doubting Thomas," but luckily the excellent result in the first case caused me to try it in a number of other cases, and I have not the slightest hesitation in saying that the treatment undoubtedly aborts the disease. Two months since I purposely allowed a typical case to run its course for eight days, using the old treatment. The temperature followed the general course, being a degree higher each evening. On the eighth day, I put the young man (eighteen years of age) on prescription No. 1, giving the powders every fifteen minutes for the first twenty-four hours, and every half hour for the next twenty-four hours. On the third day they were administered every hour and on the fourth day, every two hours; after that every four or five hours for a week.

When I commenced the medicine, the temperature was

103.5°. On the evening of the second day, it fell to 101°, and in two days more it was entirely gone, never to reappear. The bowels moved freely, six or eight times daily for several days. Ptyalism did not appear. I used no other treatment after commencing the powders. (Tablets.) Put me down as a firm believer in the treatment, an enthusiast in fact. Let the doubters try the treatment and be convinced."

The original letters and reports from which these extracts are taken, and more than a thousand others on the same subject, as well as the original charts (of which you have been inspecting copies, many of them containing the verification and signature of the physician who attended the patient or who watched the results of treatment), are over at my hotel, all of which I shall be pleased to have you inspect. They contain much valuable information and would well repay a careful examination.

I should like to have presented more of this unimpeachable testimony, but the line has to be drawn somewhere, and these documents, with those I have already transcribed for presentation before the Ohio State Medical Society, should be amply sufficient to accomplish their purpose, especially since through the courtesy of Dr. Cunningham I have been able to exhibit the anatomic specimens, showing the ulcerated Peyer's glands, the tumefied mesenteric gland, and the intussusception which caused the death of the patient; and with them the clinical chart, kept at the bedside, in which the thermic line as it approached normal, indicates that the disease was aborted and the patient practically cured of his typhoid fever on the seventh day of treatment. (See chart marked Dr. Cunningham, Case No. 3.)* And

*The report of Dr. Cunningham's case No. 3 (James K.) was taken from this paper to be reported to the Ohio Medical Society.

The report of this case after having been read in connection with this paper,

if it be admitted that even one case of typhoid fever has been aborted, the total fabric of those who dissent from my views, reared as it is upon the antiquated and illogical hypothesis that this specific infectious, this "self-limited disease" cannot be aborted, is demolished.

The reports heretofore made by me should have left no doubt as to the power of antiseptic medicine, nor do I believe they would have done so, could all or even two or three of the dozen papers I have written on this all important subject during the last few years, have been listened to and deliberated upon by one body of scientific men. They have, however, been so much diluted by their great distribution (having been read before so many widely separated societies, from the Atlantic to the Pacific) that very few physicians have heard more than one discussion of the subject, but when all these papers are gathered together and published under one cover, what Virchow calls "the brutal force of figures" cannot but convince any thinking and unprejudiced physician "That typhoid fever can be aborted." "Bis ac ter, quod pulcrum."

Summarizing, you have my nineteen years of fairly satisfactory clinical experience with the method I have advised; the last thirteen years without a death in my own practice from typhoid, malarial, or any continued fever, and as long practice added to my proficiency, a gradual reduction of the duration of the disease, as well as a lessening of the intensity and violence of the symptoms.

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was presented and the anatomical specimens exhibited before the Ohio State Medical Society, in the transactions of which it will be published. This double report is fully justified by the rarity of the case, no other instance having ever come to my knowledge in which death has ensued after typhoid fever had been aborted, and because of its great value since it establishes the truth of my theories beyond question or cavil, in the court of final resort.

You have the 800 cases, with nine deaths, reported by 117 other physicians, some of whom have treated large numbers—as many as sixty cases through severe epidemics, without a death—approximating my best results, and showing a grand total of 1,200 cases, taken at all stages of the disease, with only nine deaths, seven or eight of which were clearly due to grave complications, to the late stage of the disease at which treatment was commenced, or to faults of preparation or administration of the remedies.

The foregoing is a brief summary of the (at present) voluminous and cumulative evidence; absolutely apodeictic as to the possibility of aborting typhoid fever; strongly presumptive as to the truth of the declaration that every case of the disease "can be aborted, and that death is a wholly unnecessary consequence," and more than competent to convict me of grave dereliction of duty, did I not impart my theories to the medical profession in unmistakable language.

TYPHOID FEVER.*

Gentlemen of the Mitchell District Medical Society :

I thank you for your invitation to come so far to address you. I fully appreciate the honor you have thus conferred upon me, and I accept it as an earnest of your interest in and anxiety to learn more of the strange theories which I have promulgated. I presume that you wish to know wherein my practice differs from that to which you are accustomed, as having been taught in the best medical colleges, and what it will accomplish, what caused me to discard the long cherished dogmas of my profession ; upon what substratum of fact my theories stand, and by what evidence they are supported.

Since the year 1880, and especially during the past two or three years, I have presented such a redundancy of absolutely apodeictic evidence that "typhoid fever can be aborted," that any allusion here to that part of my subject may appear supererogatory ; but the medical profession, and through it the world at large, has become so thoroughly imbued with the reverse opinion and the sentiment expressed in the phrase, "Typhoid fever must run its course," forms so conspicuous a part of the medical literature of this age—extending its baleful influence everywhere—that it teaches the physician to regard the long weeks of a living death, through which the victims of this disease must, under the "old regime," pass on a journey

*Written for the Mitchell District Medical Society, West Baden Mineral Springs, Ind., July, 1895 (not read).

which he can neither arrest nor guide nor select the final halt; as a period in which his own uselessness is so apparent that not only he exalts the nurses' and degrades his own sphere; but the patient, if he have sufficient consciousness, and the friends, also, learn to place a higher estimate on the services of the nurse than upon the skill of the physician.

Indeed, the denunciation of Mephistopheles in Faust,

> "Of medicine the spirits caught with ease
> The great and little world you study through,
> That things may then their course pursue
> As Heaven may please,"

is but slightly, if at all, at variance with the teachings and practice of the mass of the medical profession, and it can scarcely be condemned for its severity when applied to the "symptomatic treatment of typhoid fever."

This may seem an unjust arraignment of the medical profession, but I know of no professor of the "Principles and Practice of Medicine" in any medical college in the whole civilized world, who teaches that it is possible to "abort typhoid fever." Nor do I know of any medical text-book which directly or by implication admits that such a result is obtainable, or does not educate its pupils to put their faith in the apochryphal dogmatisms of an age entirely ignorant of the pathogenesis of the disease. I was told that the distinguished French Professor, Bouchard, taught that "typhoid fever could be aborted," but in his latest work I find that he denies the possibility of at once destroying the pathogenic agent. He says that "we must reckon with the fever," and adds: "We are here in the presence of a continued fever, which is without intermission destroying the patient for weeks." Moreover, the recent appearance in his own country

of an exhaustive work on typhoid fever (La Fievre Typhoide) in which rational (antiseptic) treatment is most unintelligently discussed, and the Brandt method lauded, would seem to indicate that even the very conservative teaching of this distinguished professor has not met with the welcome to which it is entitled among his own people.

Notwithstanding all of this positive testimony to the contrary, the fact that I have been "aborting typhoid fever" can be questioned only upon the hypothesis that all of the patients whom I have treated for "typhoid fever" since 1882 (and nearly all since 1876) were the subjects of mistaken diagnoses; that during all the intervening years I have happened to have only "mild or abortive cases of typhoid fever;" that I have had no typhoid fever at all to treat; that all of the physicians who have confirmed my diagnoses were mistaken; that all of the physicians who have called me in consultation to see cases of typhoid fever were incompetent; that all of the 123 physicians who have reported about 900 cases have been in error when they supposed that they were "aborting typhoid fever;" that virtually all of the (partly estimated) 1300 cases of typical typhoid fever treated antiseptically happened to have been some other disease, because they recovered in a few days; that in the worst epidemic of typhoid fever of which I have any knowledge, all of the cases taken sick within eight days before my arrival, happened to be exceedingly mild, while those who were ill earlier or later were exceedingly severe, and, finally, that this antiseptic treatment for typhoid fever is practically applicable to the cure of some occult disease so like typhoid fever, that not myself only but a large number of physicians supposed to be competent

diagnosticians, have been unable to make a differential diagnosis between them. The hypothesis is absolutely untenable and its indefensibility will be rendered more apparent by a brief history of my work.

On the 29th day of August, 1876, I was called to attend the young daughter of the President of the First National Bank of Youngstown, Ohio. She presented well-marked symptoms of typhoid fever, and on my second or third visit I made a diagnosis in accordance with the indications. In a very few days the patient was well. In the meanwhile, a young son had also been attacked and presented exactly the same symptoms. I have no complete record of this case, but it is indelibly impressed upon my memory as the severest, long-continued case of typhoid fever I have ever treated. His temperature reached 107° F. It was 106° several times and it rose above 105° every day for weeks. His wild delirium and incoherent ravings were piteous, indeed; his extreme exhaustion, extending over a long period of time awakened the keenest anxiety. The long weeks during which he lay on the very verge of the grave was a time of weary watching for his parents and friends and especially for his physician. In compliance with the earnest solicitation of his parents I slept in the house for weeks, to be near at hand in case of emergency. During his early convalescence his craving and begging for food were sorrowful to hear, and when he finally crawled out of bed he was so emaciated that his lips would cover neither his teeth nor gums, and his old vigorous boyhood seemed a long way off when, on the 27th day of December, after 120 days of sickness, and then scarcely able to walk, I discharged him cured (if that may be called a cure in which the constitution has

been destroyed, stalwart youth converted into almost helpless debility, and the functions of some of the organs, perhaps, permanently deteriorated). I felt more pride (so strangely is the human mind formed) in looking on that almost total wreck of a young life than I would to-day on a dozen severe cases which were restored to perfect health in ten or twelve days.

During the illness of this young man, another son and two servants of the house had very severe attacks of the disease. The father and still another son presented the same characteristic symptoms of typhoid fever, but they recovered in longer or shorter periods, and these were undoubtedly "abortive" or "aborted" cases of typhoid fever, such as present themselves to every practitioner who treats many cases of the disease.

These cases, all occurring in one house, exhibiting all grades of violence, from the most pernicious type consistent with ultimate recovery, down through all of the gradations, to the "abortive type" in so mild a form as to render a precise diagnosis impracticable, awakened a deep interest in my mind and led me to wonder why, if nature could give complete immunity from all evil and deleterious effects of the poison of typhoid fever to 95 per cent of those exposed to its malign influence, why should not the science of medicine aid her by curing the insignificant few which she fails to relieve.

It seems to me a ridiculous and presumptuous as well as an illogical position which the medical profession assumes in recognizing the power of nature unassisted, to abort typhoid fever by giving this name, "abortive type," a place in the nomenclature of diseases, and then to deny to all medicine the potentiality to assist her a little in her endeavor. Nature's work is thereby accepted, given an

appellation and an honorable place in the list, while man, going a step farther and doing for all cases that which nature does for a few, and regardless of the erroneous teachings and moss covered prejudices, applying the right name to his work at the expense of the destruction of what has always been considered a well-established axiom, is looked upon as an iconoclast.

Ten years before the occurrence of the above mentioned incidents, I had given much thought to the application of antiseptic medicine to the cure of microbic diseases, and had in 1866–7, treated a few cases of cerebro-spinal meningitis and erysipelas with the sulphites, with no very wonderful results, truly; but since, theoretically, antiseptic medicine offered the only hope for the miserable beings who are the prey of typhoid fever, I turned all of my attention to this field of investigation, and very soon had abundant opportunity to study the disease clinically and to test my theories. The narrative of my failures or partial successes with all of the various agents, from turpentine and the sulphites to iodine, which were one after another used and abandoned, would be a waste of time and space, and would I fear exhaust the reader's and hearer's patience, although it might save future explorers the trouble of testing unreliable antiseptics. The only one of these earlier remedies which I still occasionally use is turpentine. Creosote has been displaced by its active principle, guaiacol, and that by the more potent and nontoxic guaiacol carbonate. It was long before I dared to use the saline or vegetable cathartics, on account of the strong condemnation of them by some of the best authorities, notably Harley in "Reynold's System of Medicine," who says "the vegetable and saline cathartics must never be employed in the

treatment of the disease at any period ; . . . calomel should be avoided ; its action is too irritant." I consider this the worst advice that could possibly have been given. Were I limited to two remedies in the treatment of typhoid fever, I should select one of these despised drugs for one of them. Yet the article was written by a most eminent and trustworthy writer ; by one who had had large experience in the London fever hospitals, and I had not at first the courage and fortitude to ignore his advice, but in the end I became thoroughly dissatisfied with all of these other medicaments ; so I began using exceedingly minute portions of the mildest of the salines and mercurials, and as continued observations added to my perception of the great importance and assistance they would eventually be to me, I began to use all of them more heroically.

While learning my lesson in the dear school of experience, I saw many melancholy and calamitous scenes, one of which is ineffaceably engraved upon memory's tablet. A brilliant and beautiful young school girl had an exceedingly distressing and unique attack of typhoid fever. I was first called to see her at 10 o'clock A. M., and was told that she had felt as well as usual in the early part of the morning, and had attended to some light household duties. Her temperature was 106° F., her pulse bounding and 160, her face flushed. She complained of an intense headache. I attempted no diagnosis at that time, but prescribed the medicine to be given, and left the house to find my uncle, Dr. Timothy Dwight Woodbridge, a gentleman of unusual ability and more than half a century of experience in the practice of medicine. He has since deceased. On returning to the house we found her temperature 107°, pulse uncount-

able, and she had become absolutely unconscious. During her illness she had repeated hæmorrhages; was ill nine weeks; asthenia so pronounced that on returning one evening I found the nurses (two nuns) and all of the relatives and friends sitting around the large room, waiting for her to breathe her last breath. My questions were answered with the statement that she had been lying as I now saw her, apparently lifeless, for several hours. Nictation had become so infrequent that the conjunctivæ were dry and glazed. No respirations were perceptible; the heart beats were inaudible, and she was to all appearance dead. The nurses did not think that she ought to be tortured any longer to prolong a life which could not possibly be extended many hours. I immediately resorted to every known means of stimulation, and had the satisfaction after several hours to see her breathe deeply once more, and half an hour later swallow a few drops of a mixture of brandy, ammonia and water. She finally recovered, but was unable to continue her studies. She felt that her mind was gone and she wished she was dead.

I did not feel so proud and so much elated over my work after hearing her sad remark as I had a few months before, when I had discharged her, cured (?). During her illness, her mother and sister both had mild attacks of typhoid fever, which I think were greatly modified, if not actually aborted by antiseptic treatment.

A succeeding six years passed. My patients continued to have intestinal hæmorrhage, and three died after that accident; but I was groping blindly through the black night of ignorance to the dawn of a brighter day.

I learned to exhibit my antiseptics more intelligently, and to add one ingredient after another to my prescriptions, eliminating such as seemed to accomplish no useful pur-

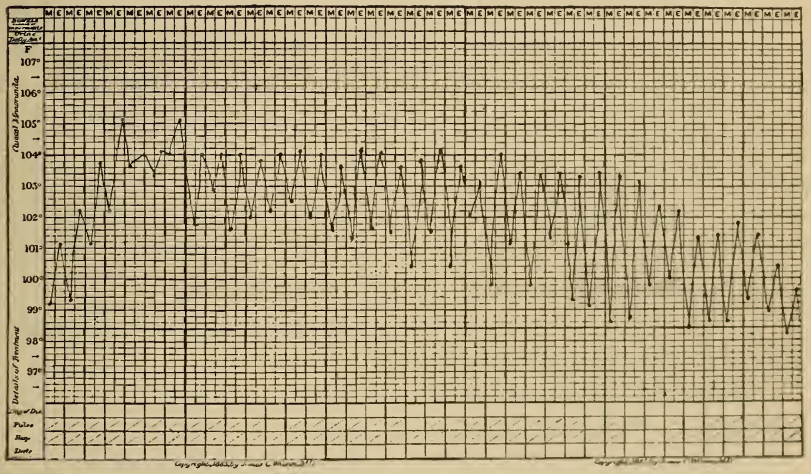
pose. I could see that although I was not cutting the disease off entirely, I was having better results, both in a lower death rate and a shorter duration of illness. Even in those cases that ran a tedious course, my patients showed the effect of the better treatment in that they had less delirium; a generally lower temperature; less tympanitis; very little troublesome diarrhœa; a good condition of the nervous system, evidenced both by the lack of severe symptoms and also by the fact that they slept well; by a good pulse; a moist tongue; by a general feeling of comfort; and above all, by rallying rapidly. Health was quickly regained, with strength and hearty appetite. All of these things had been seen over and over again for more than twelve years before I dared to announce to my profession that "typhoid fever could be aborted," and then not till I had satisfied myself that every typical case which came under my care as soon as a diagnosis was practicable could be aborted in ten or twelve days or less, and that in cases in which treatment was begun too late to abort the disease, it could be so modified in its course as to leave no doubt on the mind of any unprejudiced man capable of drawing correct conclusions from given facts, that I could do all that I promised, that I was satisfying every expectation awakened by my most favorable prognoses.

With the white light of professional jealousy turned on my work and every penny-a-liner and psilologist writing in defense of the well-nursed dogmas of the days of yore, with the medical profession and the people watching me, with the knowledge that I have always courted the fullest investigation of my work and that I have always held myself in readiness to have the experimentum crucis applied to my theories in hospital or in private practice, at home or abroad, these facts should be regarded as final and decisive

proof that "typhoid fever can be aborted;" leaving out of consideration the extreme folly of which one would be guilty, who would, without the most indisputable ground of belief, or indeed of positive knowledge of the invulnerableness of his *role*, take issue with those who from time immemorial have maintained utterly antagonistic ideas. It must be quite clear to the most casual observer of the trend of medical thought that if all this could not have been done, I would have been driven from my place in the medical profession as an impostor long ago.

It was fortunate for me however, that a little army of brave men, a forlorn hope, in defiance of the ridicule they must face, if in the end it should appear, that all the great master minds of the medical profession are right, and I am wrong, and that typhoid fever cannot be aborted; have written me, declaring their perfect conviction of the correctness of my teaching. Some of them in giving in their adhesion to the treatment, have deliberately used language as strong as that which I have been so severely criticised for uttering in the heat of debate. In extenuation of their faults, and of mine, this plea should be allowed, that when a physician has for years treated typhoid fever symptomatically with the usual results; has seen his patient pass from a bad state to a worse one; has exhausted his resources in futile attempts to mitigate the horrors of his condition, sees him drifting to the great "beyond," and himself and all other agencies, powerless to impede his passage, and has then learned to so utilize antiseptic medicine, as to be able to meet the fell destroyer with such power to cope with the enemy as to assure always an easy victory; it arouses in the most sluggish intellect, some enthusiasm. But when he sees that he may take charge of a patient, with a temperature of 105°, or 106°, with all the other symptoms correspondingly

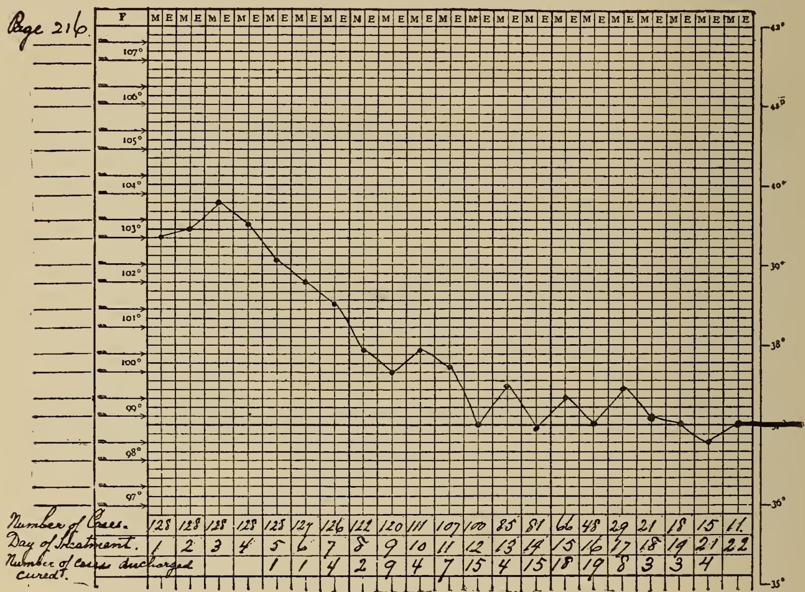
bad; and with perfect confidence that he is awakening no false hopes, by assuring the patient and his friends, that there is no danger of death, but that after a brief illness, attended by little discomfort, he will be able to resume his ordinary occupation, with all his faculties normal, and his



[Chart showing the thermic line of a typical case of typhoid fever after Wunderlich. Taken from Murchison.]

strength little if at all impaired; he may, I think, be excused for discussing the subject without much regard to euphemism, especially when he has been pestered by the criticisms of those who seem to know little of the pathology of the disease, and less of its antiseptic treatment.

I have exhibited all of the clinical charts that have been sent me by these physicians, and related the bedside histories of my own typical cases so frequently in the various societies in which I have read papers on typhoid fever, that their appearance must be familiar to every one who has been in the habit of attending these meetings, and so I have



The above chart shows the average highest daily register of the temperature of cases of typhoid fever which were treated by the abortive method. The number of cases included in the daily averages is shown at the bottom of the chart. It should be noted that after the fifth day of treatment a certain number of patients were discharged each day with a normal temperature and the average is always of cases which are left uncured, hence the thermic line does not delineate the effect of treatment as favorably as it would were the record of the entire number carried to the end.

decided to give a synopsis of the well-thumbed charts in one which will give the thermic line of the daily average of all the patients which I have treated by my method, so far as I have complete records, 122 in all, . . . and I present with it a chart of a severe case of typhoid fever, giving the thermic line after Wunderlich, copied from Murchison.

I regret that I have such incomplete memoranda, which is due to the fact that a great many of the physicians who have reported their general results with the abortive treatment in 900 cases, sent no charts, and of my own cases, I kept few complete records prior to 1893.

A comparison of these charts will show you at a glance the effect of antiseptic medicine, and yet, not all of its effect.

The tracing of Wunderlich conveys no idea of that which is known as the typhoid state. It does not show the patient in his rambling delirium, with a burning fever and a parched tongue; with the necrosed and ulcerated Peyer's glands, with the enlarged spleen and the tumefied mesenteric glands, with the enormous tympanitic distention; with the not infrequent accidents of intestinal hæmorrhage and perforation or the grave complications and the fatal termination. Nor does the thermic line in my chart show as I wish it might do the absence of all of these hideous symptoms and complications.

If it could present the picture in its true coloring the patient would be found three or four days after the institution of efficacious antiseptic treatment, with all of these graver symptoms in abeyance, free from ache or pain; sleeping the sleep of health; hungry for food which the system is quite capable of assimilating; anxious to take outdoor exercise which is always allowed as soon as it is certain that there will be no necrosis of Peyer's glands. In fact, in all respects a perfectly comfortable invalid who will be ready to resume the active duties of life, with the strength and all of the mental faculties unimpaired, as soon as the temperature has touched normal and remains there.

Assuming that the medical profession has recovered from the shock occasioned by my first modest announcement "that typhoid fever can be aborted" and "that death

is a wholly unnecessary consequence of the disease;" I wish to open up to-day a new field of discussion, a fruitful field, which I have cultivated and gleaned as carefully as the limited means at my disposal would permit, and to which all of my papers on "typhoid fever" have been but a prelude.

I allude to the application of the same general principles which govern the antiseptic treatment of typhoid fever, to the cure of a large class of the so-called "microbic diseases" such for instance, as diphtheria, scarlatina, pneumonia, cholera infantum, la grippe, smallpox and probably many diseases of which I have no practical knowledge.

As far as my experience can be relied upon as a criterion, it seems to indicate that a very considerable number of the diseases which are supposed to be of microbic origin yield far more readily, cause much less anxiety and suffering, and no impairment of the constitution, are accompanied by fewer and much less grave complications, and are followed by a much lower death rate under a judicious antiseptic treatment than by any other known method.

For these reasons alone, antiseptic medicine should commend itself most highly to the medical profession. It has however other charms which endear it to my heart, prominent among which is its benignity, it being so harmless that I know of no pathological state at all resembling any of these conditions in which any one or more of the ingredients that constitute my armamentarium, would do the slightest injury to the most feeble patient, were a dozen doses administered at once.

This statement must sound strangely paradoxical to the gentlemen who have been seeking for antiseptic remedies among the most virulent and dangerous poisons known to toxicologists. It is difficult to understand just why this rash and pernicious practice should have become so com-

mon among a certain class of physicians whose remedies unquestionably often placed the lives of their patients in greater jeopardy than did the disease; and I have no doubt you all know of cases of typhoid fever, diphtheria and other maladies which owed their fatal ending, not to the ailment, but to the corrosive sublimate or other poisons administered. Those who pursue this senseless course, do so under a mistaken idea that human life and germ life are governed by the same laws. It is well known that many bacteria are destroyed by substances which are entirely innocuous to man, and that others are unable to live in the air we breathe. A notable instance of the former class is the "hematozoa malariæ," which although found circulating in the blood and permeating the spleen and other organs, are quickly eliminated by doses of quinine so small as to produce no other appreciable effect.

In the treatment of zymotic affections, it may be and probably is not necessary to kill all, or possibly any of the germs which cause the disease; some respect should be paid to the "vis medicatrix naturæ" and in arranging our line of battle, we should give due consideration to the fact that in man the protective alexins need little aid to guard him from all ill effects from germic attacks, and if we but reinforce them by weakening the enemy, we will have done all that is requisite.

But little as seems to be demanded of us, it must be remembered that typhoid fever has through all time resisted successfully, not antiseptic treatment alone, not the feeble efforts of the weaklings only, but all of the resources of the giants of the profession; and no one must imagine that he who would abort this masterful disease will have an easy task, or without especial training will be invariably successful.

Notwithstanding my nineteen years of careful study and

experience, despite my unremitting vigilance; my care that every remedial agent exhibited was pure, active and properly prepared, I have made so many mistakes, that in looking back only a very few years, I can see that "vigilance" stands not least among the causes that have saved me from having a death from typhoid fever for more than thirteen years.

I therefore insist that it is but just that in any future measurement of the value of the treatment I advise; that these facts should be given due weight, and that one successful abortion of the disease should counterbalance an hundred failures; for example, the twenty-five cases of typhoid fever aborted by Dr. Reed are of more worth as evidence that the disease can be aborted, than would be 2,500 failures as evidence that his results were impossible. Although up to the present time, there have been very few failures reported to me, and but two condemnations of the "Woodbridge treatment" from that cause, it must not be expected that the reports will always be so one sided.

It is greatly to their credit that so many physicians have succeeded so well, under the brief outline of treatment that I have been able to give; and although I shall in a few weeks publish a treatise on "Typhoid Fever and its Abortive Treatment" in which I shall give the management of the disease in detail, and shall make an effort to tell all I know on the subject, I shall be greatly surprised if, after the medical profession in general attempt to follow my directions, there are not reported many failures to secure satisfactory results.

I believe there are two ways in which the "Woodbridge treatment" of typhoid fever and allied diseases, in all of its minute details can be fully imparted, and that is by clinical teaching in consultation or by clinical lectures. By the former method I have already made a few physicians abso-

lute masters of the disease, and as soon as I can encompass it I shall, either at home or abroad, open a hospital in which I will teach those who honor me with their attention, not the "abortive treatment of typhoid fever" only, but the application of antiseptic medicine to the cure of some of the most dreaded of the zymotic diseases.

TYPHOID FEVER AND ITS ABORTIVE TREATMENT.*

Gentlemen of the Society:

You who were present at the last meeting of this Association at Hot Springs a year ago; heard your most distinguished members flood that great hall with their eloquent speeches in denunciation of my declaration that typhoid fever could be aborted; heard my silver-tongued friend on the right declare that typhoid fever "must run its course of four, five or six weeks or longer, uninfluenced by any known drug;" heard the peroration of that other gentleman when he argued that because my cases were aborted they were mistakes in diagnosis, heard all of these impassioned harrangues, which were received with ovations of applause, and despite the fact that there were more than 300 members in attendance, so many of whom were anxious to join in the discussion that your President was at last forced to peremptorily close the debate, when not one voice was raised in behalf of my theory, you may imagine that I met with, in your society, an unique reception. This is not so. I have presented reports of aborted cases of typhoid fever before a large number of medical societies, and my experience justifies the conclusion that the same declaration would be met with a like greeting if read before any gathering of well-informed medical men, anywhere in the world, and that your orators simply showed themselves well versed in the literature of the sub-

*Read before the Mississippi Valley Medical Association, Detroit, Michigan, September 4, 1895.

ject, a blind guide which they may be excused for following until it has been rewritten.

With this object in view, the first query would be: Is the ancient assumption of the medical profession that "typhoid fever cannot be aborted," in defense of which so much eloquence has been expended; is this belief really sustained by our present knowledge of bacteriology? More than two centuries have elapsed since, in 1673, the microscope was, by Leeuwenhoeck made to show living germs in the alvine dejections, and therapeutists have had ample time to profit by the discovery; but is any one ready to say that the accepted treatment of typhoid fever in this year, 1895, is more scientific than it was when in 1864 I sat so long, so many weary hours, over the microscope, studying cell development and cell metamorphosis, of which we then knew so little. Giant strides have been made in the science of bacteriology since a dignified professor and your humble servant on one bright Sunday morning in the latter year, trundled heavy scales through the streets of Cleveland, down into the basement of the court house, to weigh the body, the liver, the spleen and other organs of a man (who had been shot down in the vigor of manhood and health) and carried away other portions of them for microscopical examination. We realized then that the microscope would reveal to us new worlds of which we had not even dreamed.

We sought then in the sputa and the lung for the cause of tuberculosis; in the urine and kidneys for nephritic derangement; in the buccal cavity, the blood, the fæces and the intestines for the pathogeny of typhoid fever; and in the blood, perspiration, etc., for what Laveran has since found, the hematozoa malariæ. (A year or more later the above mentioned professor published a treatise on his

microscopical studies of typhoid and malarial fevers, tuberculosis, etc., so that our investigations did not quite go for naught.)

Bacteriologists have delved for the origin of typhoid fever in microbic fields more industriously and successfully than the general practitioner could possibly have done, and they are undoubtedly entitled to the most honorable mention for the noble, far-reaching and promising issue of their bewildering and arduous task.

Escherich, who first described the bacillus coli communis; Eberth and Koch, who each independently of the other, discovered the mobile rods, with their thin, viscoid coating, since known as the bacillus typhosis or the bacillus of Eberth; Gaffky, Klebs, Friedlander, Meyer, Fischl, Browitz, Sokolof, Klien, Recklinhauser, Brieger, who isolated and described typho-toxin; Pfieffer, who has probably come nearer than any one else to an actual demonstration of the pathogenic nature of the bacillus typhosis; and a host of others, including our own Sternberg, form a galaxy of stars whose names and deeds will live forever.

The revelations of their microscopes followed each other in quick succession. Sometimes it seemed as if the pathogenesis of typhoid fever were truly written; but the apparently fixed fact of to-day became the moot question of to-morrow.

The germ, to whose presence in man is accredited, by one observer, the most dread disease, is by another taken with impunity. That which was supposed to cause a pathological state, is found to be the prime factor in its cure. What was supposed to be harmful is found to be beneficent. The bacillus typhosis—the bacillus of Eberth—has been so long and so generally accepted as the cause of the disease, that the wisdom of questioning the proof may be well impugned,

but the characteristics of this microbe and those of the bacillus coli communis are so interwoven with each other; and the signs that have been supposed to be pathognomonic of one or the other, have been found in so many instances to be common to both, that it is impossible to ascertain any unequivocal evidence that the bacillus typhosis may not be the bacillus coli communis virulized by some occult poison.

If then, in this year 1895, after all of the deep researches of these studious painstaking and expert scientists and scholars, we are still without such exact data as would warrant us in giving a name to the pathogenic agent of typhoid fever—what title best befits him who first announced the incurability of the disease?—and what say you of a learned profession, which without inquiring upon what special knowledge it was made, accepted such a damnable prediction and allowed it to stupify the brain and paralyze the hand of every investigator; allowed itself to become *particeps criminis*—thus assuming the responsibility of every death from typhoid fever since the day on which the discovery of a curative treatment would have been made, had the hateful and blighting vaticination never been issued.

While we cheerfully and gladly acknowledge our indebtedness to the bacteriologists for their tireless and by no means fruitless investigations, it must be confessed that their wonderful discoveries have not been productive of such marked advancement in practical medicine as we had a right to anticipate, especially when encouraged and stimulated by Flint, who in his "treatise on the principles and practice of medicine" said "it is not an unreasonable expectation that an antidote or a parasiticide as effective in typhus and typhoid fever as quinine in malarial fever, may hereafter be discovered, and such a discovery is a proper aim for continued experimental observations."

The patient, sinking lower and lower from typhoid fever would not be greatly edified with a dissertation on the finding of the bacillus typhosis and its toxins, only to be told that the "disease must run its course" that as Wilson in 1881 said: "No medicine or method of treatment by which enteric fever can be arrested is at present known" that from 10 to 20 per cent of those attacked by typhoid fever die, that if he fall within that category he too must die, because "the known resources of therapeutics do not afford means for the arrest of these fevers (typhus and typhoid), nor even for shortening the duration of the febril career." (Flint).

[The remainder of this paper is inserted in this book under its appropriate head of "Treatment."]

DIAGNOSIS.

SYMPTOMATOLOGY.—In making an analysis of the more important symptoms of typhoid fever, I have arranged them in the order in which they occurred to my mind, endeavoring to think of and describe the more important ones first; but it is not claimed that they are all arranged in that order.

The rose spots—the "taches roses, lenticulaires" of Louis—constitute the most truly pathognomonic symptom of typhoid fever to be found during life; they are rounded, slightly elevated, convex, not acuminous, not indurated, purplish or rose colored spots. They vary from one-half to two lines in diameter. They have well-defined regular margins; they disappear on pressure and reappear quickly when the pressure is removed; it is rare that a minute vesical forms at the apex. They have been known to appear as early as the second day of the disease (see report for 1888 and 1889 of Dr. John B. Hamilton, Supervising Surgeon-General of the United States Marine Hospital Service), and in other instances they make their appearance for the first time late in the course of the disease. They generally appear about the eighth or tenth day, fade away in three, four or five days and are replaced by a fresh crop, and so they continue, fresh ones coming out and old ones fading away. It is rare to see many of these spots at one time. I have seen a very large number of cases in which not more than a dozen spots would appear from the beginning to the end of the illness, while on the other hand I have seen the entire abdomen, chest and arms covered by crop after crop, and Murchison

says that he has counted repeatedly more than one thousand on one patient at one time and adds that several other cases in which they were equally numerous had come under his notice. These rose spots are found most frequently on the chest, the abdomen and the back; they may sometimes be seen on the under side of the arms and on the back, when they cannot be found on any other part of the body. Various writers have called attention to the fact that they sometimes appear after a warm bath. The average duration of the eruption is about fifteen days, the spots generally disappearing when convalescence is fairly established. Under the abortive treatment of typhoid fever, it is not at all unusual to see patients walking about the house, or even on the street, an examination of whom would reveal an abundance of characteristic rose spots. This symptom being absolutely pathognomonic of the disease, it is to be regretted that it is not always in evidence.

Murchison says: "Of 5,988 cases (of enteric fever), admitted into the London Fever Hospital during a period of twenty-three years, they (rose spots) were noted in 4,606, or 76.92 per cent. In some of the other 1,382 cases, the fact of the spots not being observed, was probably because they were not looked for with sufficient care.

"Louis observed them in 150 out of 177 cases, and in the remaining seventeen cases, he was unable to say that they were wholly absent, except in five of the cases."

Surgeon General Hamilton's investigations show that the eruption was absent in 64 of 241 cases. "The earliest date (of their appearance) was the second day; it (the eruption) appeared on the 3d day in 2 cases; on the 4th day in 3 cases; on the 5th day in 5 cases; on the 6th day in 8 cases; on the 7th day in 21 cases; on the 8th day in 17 cases; on the 9th day in 8 cases; on the 10th day 18 cases;

on the 11th day in 11 cases; on the 12th day in 10 cases; on the 13th day in 2 cases; on the 14th day in 10 cases; on the 15th day in 1 case; on the 16th day in 3 cases; on the 17th day in 4 cases; on the 18th day in 4 cases; on the 19th day in 1 case; on the 20th day in 1 case; on the 21st day in 2 cases; the date was not given in 45 cases."

Dr. Osler says: "Rose spots were noted in 199 of 229 cases, 86.9 per cent. In nine cases they were very abundant, occurring not only on the trunk, but on the arms and thighs. In one instance, a lad of fourteen, they were present on the face. In two instances there were small petechial spots."

My experience corresponds with the oft expressed opinions of various writers, that the amount of eruption is no measure of the danger of the disease—if it have any significance at all, it is a favorable rather than an unfavorable sign.

TEMPERATURE.—The one constant symptom which in my experience has been present in some degree in every case of typhoid fever, is a greater or lesser elevation of the temperature. An exact counterpart of the thermic line of a typical case of the disease, after Wunderlich (to whom we are so deeply indebted for having educated the profession in the use of the clinical thermometer), would perhaps present itself very rarely, even to a close observer of a very large number of patients. Nevertheless a steplike rise of the temperature with a morning, or—very rarely an evening—remission of one or two degrees, during the first three or four days of the disease, is the most constant, and shares with headache alone, the honor of being the most characteristic symptom of this early stage of typhoid fever. The absence of the typical typhoid fever curve (so-called), is however, not negatively pathognomonic of the disease. I cannot agree

with the author of "Typhoid Fever" in Pepper's system of medicine, who says; that a temperature of 104°, F. (40 C.) at any time during the first or second day, should exclude typhoid fever from the diagnosis. Greater variations from the typical typhoid fever curve, than would be a temperature of 104° (40 C.), on the second day have been observed many times. Osler reports "two instances in which contrary to the general rule, the temperature reached the fastigium on the second day. One is the interesting case . . . in which within twenty-four hours . . . the temperature rose eight degrees and then remained high. The other after seven days apyrexia rose more than seven degrees in thirty-six hours and did not reach normal for fifteen days." I have seen one instance in which the temperature at nine o'clock in the morning of the first day of the malady was 106° F. (41.1 C.), and the pulse 160.

An hour later my uncle, Dr. Timothy Dwight Woodbridge, examined with me this patient and we found the thermometer registered 107°, F. (41.6 C.), and the pulse was absolutely uncountable (see report of the case of Orrie W). If the abortive treatment really aborts the disease, we should expect the period of fastigium to move backward in proportion to the rapidity with which the malady is cured. And this we find to have been accomplished in my cases, for whereas, Dr. Osler reports as something very unusual the fact that two cases out of 229 reached the fastigium on the second day of the disease, 82 of 151 aborted cases had reached the fastigium on the second day, and 53 of these were at the acme of the temperature on the first day of observation. That my cases were not unusually mild, is evidenced by the fact that 68 of 151 cases had a temperature of 104° F. or over, during the first three days of observation; that 54 had a temperature of 104° by the second

day; that 34 had a temperature of 104° F. or over on the day on which they came under observation, 13 of these cases had a temperature of 105° F. or over, and five had a temperature of 106° F. when first seen. Of this 151 cases, 44 were at the fastigium when they came under observation, and the temperature rarely went so high again during the disease; 29 other cases registered highest on the second day of treatment; 18 on the third day; 16 on the fourth day; 11 on the fifth day; 13 on the sixth day; 6 on the seventh day; 2 on the eighth day, and 1 on the ninth day of treatment.

The temperature in these cases reached normal in the following order; 4 on the fifth day; 9 on the sixth day; 10 on the seventh day; 9 on the eighth day; 21 on the ninth day; 19 on the tenth day; 16 on the eleventh day; 9 on the twelfth day; 15 on the thirteenth day; 9 on the fourteenth day; 4 on the fifteenth day; 3 on the sixteenth day; 7 on the seventeenth day; 1 on the eighteenth day; 3 on the nineteenth day; 2 on the twentieth, and one each on the twenty-first, twenty-second, twenty-third, twenty-fifth, thirty-first, and thirty-second days.

Of the 229 cases reported by Dr. Osler, "there were 152 cases, 66.3 per cent in which at some time during the disease the thermometer registered 104° and over. Eight cases only had a temperature above 106° F., in one the register was 107°. Fifty-nine cases had a temperature between 105° and 106°; and eighty-five cases had a temperature between 104° and 105°. Of the 85 cases with a temperature between 104° and 105° there were 7 deaths, 8.2 per cent. In the 59 cases with a temperature between 105° and 106° there were 10 deaths, 16.9 per cent and of the 8 cases with a temperature above 106° there were 4 deaths, 50 per cent. There was only one fatal case with a temperature below 104°, a man

aged seventy, who was admitted in a state of extreme debility, with consolidation of the lower left lobe, and the case was regarded as one of pneumonia."

While as we have seen a rapid and early elevation of temperature is not inconsistent with a diagnosis of typhoid fever, neither is a lower temperature than Wunderlich claims essential to such a diagnosis, negatively pathognomonic of that disease.

It is possible for a patient to have typhoid fever with a temperature registering at all times below 101°, indeed a patient may, with such a temperature have extensive ulceration of Peyer's glands, accompanied by copious intestinal hæmorrhage. Enormous rises in temperature sometimes occur in late stages of typhoid fever apparently from the most trivial causes. I have known an elevation of four or five degrees which was occasioned by some slight indiscretion in diet, when the intestinal lesions were severe, and of three or four degrees when I was quite satisfied that there were no severe intestinal lesions, the disease having been so effectually aborted as to prevent necrosis of the glands. One patient, a giddy girl, who persistently gratified a morbid appetite, had a rise of temperature of five degrees from eating two or three pickled cucumbers, and on a later occasion it was elevated two degrees from a supper of pickled pigs feet.

It is often impossible to take the temperature accurately in the mouth, and the failure to do so, has been the source of grave errors in diagnosis, and might lead to an erroneous prognosis or even injudicious advice as to diet and treatment. I therefore advise when no insurmountable obstacles exist, that the temperature be taken in the rectum, where 99° F. will represent a normal temperature.

It must be understood, that the exceptional temperatures noted are exceedingly rare, and that they do not greatly impair the value of this symptom as a diagnostic sign.

We may still regard an elevation of temperature with some of the characteristics of the Wunderlich curve, as the most constant and one of the most characteristic of all of the symptoms of the disease. I have never seen a case of typhoid fever, in which there was not a well-marked elevation of temperature with decided remissions.

METEORISM.—Tympanitis is a symptom of much diagnostic value. It was present in some degree in 463 out of 654 cases reported by various observers. These reports do not include my own recorded test cases, in 93 per cent of which it was present. By the extent of the tympanitic distention is given some indication of the gravity of the patient's condition.

ABDOMINAL TENDERNESS AND PAIN. — These are amongst the most characteristic symptoms of typhoid fever. My experience is that by the eighth day, and usually much earlier, pressure deep into the right iliac fossa will rarely fail to elicit some expression of pain. Sometimes patients will shrink from the lightest touch, while others will complain of but a slight soreness under firm pressure. When pain is complained of, it is sometimes referred to this region, sometimes to the neighborhood of the umbilicus, and sometimes it is general over the abdomen.

GURGLING. — Under palpation in the right iliac region is present in a large majority of cases, but is common to too many other diseases to be regarded as of great diagnostic value.

Enlargemement of the Spleen.—This symptom is generally, if not always present. It is greatest toward the end of the second week of the disease, and has almost if not entirely disappeared by the end of the fourth week. The enlargement is also greatest in young subjects.

Diarrhœa.—Usually of ochre colored stools, sometimes containing sloughs of Peyer's glands, shreds of membrane, particles of undigested food, and blood, is present at some stage of the disease in a large majority of cases; it was present to some extent in 347 of 442 cases examined for this symptom by several observers. The stools are alkaline instead of acid as in health. Triple phosphates frequently found and formerly supposed to be peculiar to typhoid fever, are common to other diseases in which the stools decompose rapidly. A careful microscopical study of the dejecta might verify the diagnosis in doubtful cases.

Urine.—The discovery by Ehrlich of the Diazo test, has added greatly to the importance of the urine as an aid to the diagnosis of typhoid fever. The excretion of the kidney is, especially in the earlier stages of the disease, scanty, dark colored, of high specific gravity, of offensive odor, and of excessive acidity (on account of diminution in quantity). It is hypertoxic, maintaining the latter quality sometimes for weeks after convalescence is well established. Although the Diazo reaction is not pathognomonic of typhoid fever, nor its absence conclusive negative evidence, it undoubtedly possesses some diagnostic value. It has been largely used and much discussion has taken place as to its importance, but its exact import must be determined by future investigations. It merits a place here.

Ehrlich's Diazo Test.—Made by adding to 1 volume of urine, 1 volume of the test solution which is composed of - l. c. c. of b. (b=sodium nitrite 0.5 distilled water 100) added to 40 c. c. of a (a=sulphanilic acid 5.0, hydrochloric acid 50 c. c., distilled water 1000.0). Add sufficient ammonia to render the solution alkaline, allowing the latter to flow down the side of the tube. Shake to produce a foam, which should be rose-red overlying a ring of orange red.

The microscope may prove a valuable aid to diagnosis, since the Koch-Eberth bacillus can be found in the urine in a very large percentage of cases of typhoid fever, and when found are, when supported by other symptoms, pathognomonic of that disease.

Large numbers of foreign and a few American observers (notably at the Johns Hopkins Hospital) have devoted much time and study to the urine and to renal complications and the literature on the subject is extensive indeed, but I have not referred to it regarding any such reference as a waste of time, since the fact that all of these studies have been made under mistaken notions as to treatment and in ignorance of the fact that the disease can be aborted, and that under abortive treatment the renal complication so carefully studied and so verbosely described, will rarely or never occur and hence this literature will all have to be rewritten. When the malady is properly treated, the urine rapidly loses its disagreeable odor, its high specific gravity and becomes clear and normal in quantity and quality.

Intestinal Hæmorrhage.—With the exercise of ordinary care to exclude hæmorrhage from discoverable extraneous causes, this symptom is practically

pathognomonic of typhoid fever. Although it may occasionally be due to the congestion of the capillaries, when it occurs before the twelfth day, and in insignificant amounts; and in this instance it may be considered beneficial. It is generally caused by the ulceration of Peyer's glands, and is directly due to the extension of an ulcer through the walls of an artery. When it occurs after the twelfth day, it is always an alarming symptom and ominous in proportion to the quantity of blood which is lost—not the quantity escaping from the bowel—for fatal hæmorrhage may supervene and yet no blood be passed. Too much confidence must not be placed upon the time in the course of the disease, at which the hæmorrhage occurs, because, no matter how early it happens, it may always be due to ulceration, and though small in quantity, it may be but the earnest of that which will come later, and close the scene. It cannot be doubted but in exceptional instances ulcerations of Peyer's glands have been observed in cases which have ended fatally during the first week of the disease.

Murchison says: "There are several cases on record where ulceration has been found as early as the ninth or tenth day, but it may commence on the seventh day." Cases have already been referred to in which the ulceration has advanced to perforation on the eighth or ninth day. "Stoll relates a case where extensive sloughs were found in the ileum as early as the seventh day," and Boudet has published minute particulars of a case, fatal at the end of five and one-half days, in which deep ulcers, with partially detached sloughs, were found in the bowel. There is reason to believe that in rare cases ulceration may commence on the

first or second day. The intensity of the morbid processes may, and no doubt does, in some degree at least determine the date as well as the extensiveness of the ulceration. The following rough outlines will give an illustration of the course usually pursued by a typical case of ordinary severity. During the first eight days of the disease, Peyer's glands, solitary or agminated or both, become infiltrated with the poison of the fever, enlarged by the proliferation of the cellular tissues and highly inflamed (the bacillus typhosis has been found deeply imbedded in its structure, as well as in that of the mesenteric glands, the spleen, the liver, kidneys and other organs). On the eighth or ninth day these glands present smooth, soft, elevated, noneroded excrescences, extending two or three lines above the mucous surface of the intestine. They are pink or rose colored, but there is no evidence that the enlargement is preceded by a stage of congestion. Hence a mere congestion of the bowel after death, without tumefaction of Peyer's glands, is not evidence of typhoid fever. Moreover, the glands may regain their normal state by resolution at any stage prior to necrosis. This is effected, as in other inflammations, by diminution of the vascularity. About the tenth or eleventh day the tumefied glands become a little more indurated. On the eleventh or twelfth day the mucous membrane covering the gland is softened and eroded. From the thirteenth to the fifteenth day the gland itself becomes necrosed. From the fifteenth to the seventeenth day the sloughs separate, leaving ulcers of varying depth, surrounded by swollen and inflamed margins of mucous membrane. Cicatrization may be long delayed, but should commence by the twentieth or

the twenty-first, and be completed by the fortieth day or a little earlier.

HEADACHE—Is one of the most valuable diagnostic signs of typhoid fever, being one of the earliest as well as one of the most constant symptoms of the disease. Murchison says that it was present in 77 out of 82 of his cases. Louis noted its presence in all but 7 cases of 133 cases. Of 126 cases in which Louis noted its date of commencement, it existed from the first in 112, and in all of the remaining 14 it began on or before the sixth day. It was present in 97 out of 101 of my cases and was the first symptom complained of in a large majority of them. It may be frontal, occipital or a general cephalalgia.

Murchison says: "It is usually confined to the front of the head. It is almost always a dull, heavy, persistent headache, which ends toward the close of the second week."

Closely allied to the foregoing symptom, is the pain of the back and limbs, which is usually described by the patients themselves as "aching of the bones." Like the headache it is often present from the very onset of the disease.

VERTIGO is also an early and tolerably constant symptom, and is sometimes the one of which patients make the most bitter complaints. One patient told me on my first visit, that she was so dizzy that she could not sleep; that she was afraid of falling out of bed, and repeated this at every opportunity, until her temperature was nearly normal.

EPISTAXIS is in my experience a very common symptom, and a valuable aid to diagnosis. I inquire about it in all doubtful cases, and its absence would lead me to

scrutinize other symptoms more closely before accepting a diagnosis of typhoid fever.

The general consensus of opinion of most of the modern writers on the subject, however, is that the symptom is far less frequent and consequently of less value as a diagnostic sign, than it appears to me to be. It usually occurs early, but is found at all stages of the disease; it may amount to but a few drops of blood, or the flow may be so copious as to prove fatal. Hæmorrhage sufficient in quantity to cause alarm, or even to require the plugging of the posterior and anterior nares is not very uncommon.

Pulse.—The condition of the pulse is of value, as an aid to early diagnosis, or rather as a warning to the physician to look for other symptoms which may be suspicious. It is as a rule accelerated, but its increase in rapidity, although accompanying the elevation of the temperature, is not always in due proportion to the pyrexia. It is possible for a case of typhoid fever, with a temperature of 106° F., accompanied with delirium, to have a pulse rate always below 90. One such instance has come within my knowledge during the past few weeks. A patient may have a pulse rate throughout the entire course of the disease but little above normal, and it may also be so rapid as to be out of all proportion to the temperature, even when that is extraordinarily high. It varies greatly in different patients and also in the same patient at different times of the day or stages of the disease. It is usually strong and beats with considerable force in the earlier stages, but as the disease progresses, it grows weaker and more compressible; beats more rapidly and often increases in frequency as the temperature drops. An irregular intermittent or imperceptible pulse, or a

pulse rate continuously above 120, is always an indication of danger, and a low pulse rate is sometimes followed by immediate death. Murchison says he has known cases to prove fatal, in which the pulse never reached 100; and in eight of Louis' fatal cases the pulse never exceeded 90.

Tongue.—The appearance of the tongue is usually characteristic in typhoid fever. When the patient realizes that he is ill enough to consult a doctor, the tongue will give assistance in making a diagnosis, if this disease be present. A moist tongue, covered with thin white fur, the margins and tip usually red, the latter often presenting, especially in infants, a triangular red space at the tip, is as characteristic of the early stages of typhoid fever as is the dry, brown and often cracked and fissured or the red glazed tongue of the second or the third week of the disease.

The Respirations in the early stages of typhoid fever are not usually accelerated, when no lung complications are present; in later stages, however, they become more frequent. Sometimes this frequency is out of all proportion to either the pulse or the temperature.

Sordes.—In the typhoid stage, sordes accumulate on the teeth, and hæmorrhage from the gum sometimes occurs.

Heart.—In severe cases of typhoid fever the heart's action may become alarmingly weak, and since the introduction of the coal tar derivatives a few years ago, a large number of deaths from heart failure in typhoid fever have been reported.

Vomiting—Nausea—Retching—are sometimes the earliest symptoms of typhoid fever, but being neither constant nor characteristic of this disease, they are more apt

to lead to an erroneous diagnosis of a "bilious attack," or some minor ailment, than to direct the physician's attention to the real disease.

HEBETUDE.—Is a symptom of considerable significance, and is present in some degree in a very large majority of cases.

DELIRIUM.—The delirium of typhoid fever is not usually present until the end of the second or the beginning of the third week, but sometimes it is very profound on the second or third, or even from the first day of the disease. It begins in almost every instance with a slight aberration of mind on first awakening; it sometimes increases to the wildest raving, and often is a prominent symptom until the temperature is normal; or it may merge into a deep stupor, coma and death. I have known of an instance in which a patient who escaped from the hospital while delirious, wandered miles away, without clothing, on rather a cold night, was arrested by the police, lodged in the station, returned to the hospital, and after all this exposure made a good and rapid recovery.

DIAGNOSIS.—While the series of pathologic changes which we designate typhoid fever, are primarily all due to the presence in the system of a single noxa, described by bacteriologists under the appellation of bacillus typhosis, there is no other acute disease so insidious in its attacks, so deceptive in its course, so varied in the forms in which it presents itself—which is accompanied by so many grave complications—is followed by so many dangerous sequelæ —or is so often mistaken for other diseases, and in which these errors of diagnosis are followed by such direful misfortunes.

The great variety of forms assumed by typhoid fever, together with the fact that all of the prodromic symptoms,

and indeed many of those of the fully developed attack, are common to many other pathological conditions, make this disease one of the most difficult, and again one of the most easily diagnosticated diseases.

When all of its manifestations are typical and regular, the tyro may recognize it with perfect ease, while in some of its atypical forms, a diagnosis by the direct method presents insurmountable obstacles even to the nicest diagnostician. A diagnosis is possible then only by reasoning by exclusion. It is, therefore, a differential diagnosis between typhoid fever and every other disease for which it (typhoid fever) could be mistaken. The other disease presenting usually more positive symptoms, can almost always be recognized much sooner than can typhoid fever. This of course requires an intimate knowledge of the symptomatology of a large number of maladies, a few of the most important of which are given here. When typhoid fever is present and not recognized, it is far more frequently mistaken for malarial fever than for any other ailment. A most fatal blunder—which the discovery of immortal Laveran, verified and supplemented by Golgi, Marchi fava, Celli, Bignami, Mannaberg, and many others, has rendered wholly inexcusable. Familiarity with all of the varied forms and stages of development of the parasites of malaria and a sufficiently accurate knowledge of the technique of the subject, to enable one to distinguish all phases of malarial disease by a microscopic examination of the blood is of course too much to expect of the busy general practitioner, but the recognition of the presence of the parasite is so easy that any physician ought to be able to at once exclude malarial fever from the patient's possible ailments when that disease is not present. The hematazoa in the red blood disk, or even the pigment globules in the leu-

cocytes, in any of the varied forms are pathognomonic of malarial disease, and although not negatively pathognomonic of typhoid fever, are strongly presumptive evidence that the latter malady is not present, since it is rare that the two diseases coexist in the same patient at the same time.

The importance of differentiating between typhoid and malarial fevers in the early stages, and the elimination from future discussion of the "vexed question" of "typho-malarial fever" is so great that too much space in this book cannot be accorded to the subject. I therefore quote from "Paludism" by Laveran—"the Parasites of Malarial Fevers" by Marchiafava and Bignami, and "The Malarial Parasites" by Mannaberg, which have been republished in English by the New Sydenham Society, as well as from the valuable article from the London *Lancet* of the sixth of July, 1895, by Dr. George Thin.

Laveran says: "The parasite of palustral blood is seen under rather varied forms, which may be classed under the four following types:

1st. Spherical bodies.

2d. Flagella.

3d. Crescent shaped bodies.

4th. Segmented bodies and rose shaped bodies."

The bodies which most interest the diagnostician whose object it is to differentiate between typhoid fever and malarial diseases are the spherical bodies, since he sees them far more frequently than all others combined. Laveran saw them in 389 of 432 cases.

While observers generally agree that the amœba in the stages of sporulation may not in all mild cases be found in the blood from the finger tip, and that in mild cases they may not always be found in blood from the

spleen at the outset of the disease or during the rise of temperature—this does not greatly diminish their value for differentiating between typhoid and malarial fevers, because although the means of making an exact diagnosis of any one particular form of malarial disease may be wanting, there will almost invariably be present some form of the parasite of malaria, quite sufficient to indicate the nature of the disease, if not its class or stage, and it may be stated that the finding in the blood of a single malarial parasite is absolutely apodeictic evidence of malarial infection. These parasites of paludism are so easily recognized that any one having seen them once would be able to make a diagnosis of malaria, without any reference whatsoever to the text. Added to this the knowledge that many varieties in fresh blood declare their nature by their movements, amœbic, of the flagella, or of the pigment, and that they fasten themselves to the red blood disk and grow and increase in size, at the expense of the hæmoglobin and an error of diagnosis would be very unlikely to occur.

These facts seem to be well established—that the paroxysms of malarial fever are coincident with the arriving at maturity of a generation of parasites—that certain forms of the disease are caused by special parasites and that the periods of time intervening between the paroxysms of a given attack of malaria, correspond exactly with the life cycle of its parasite. Thus a quotidian ague is dependent on an amœba whose cycle of evolution is completed in one day—the tertian in two and the quartan in three days. Irregular forms of malarial disease may be variously accounted for, as for instance by the presence in the organism of two generations of one parasite or the presence of different varieties of the

parasites, but I believe that all malarial infections are dependent on some form of Laveran's parasite or on the retrograde metamorphosis of their noxious products.

The technique of the microscopical examination of blood presents some difficulties, but the great and rapidly increasing importance of the subject demands that every physician should surmount them. The appliances for the purpose are not numerous or very expensive. An apochromatic oil immersion objective capable of magnifying 1,000 diameters, a series of good eyepieces, a good steady stand, and an apochromatic condenser, constitute the only costly essentials necessary for making a microscopical diagnosis of malarial disease. The lobe of the ear or bulb of the finger should be thoroughly cleansed before being pricked with a narrow lancet, to secure the small drop of blood for examination. This should be compressed between thin cover glasses and be examined fresh or stained and allowed to dry.

Dr. George Thin suggests the use of a mixture of two dyes and recommends Chezynsky's formulæ as the best for general purposes, "which is made by mixing ½ per cent solution of eosin in 70 per cent alcohol, 20 parts; concentrated solution of methylene blue in distilled water, 40 parts; water 40 parts." In preparing this mixture I think the precise strength of the alcohol is of importance.*

For "concentrated" solution of methylene blue it would be more precise to write "saturated" solution. I have found the results more satisfactory by taking care that the solution of blue was really saturated. Some of this solution is filtered into a watch glass, and the cover glass with the blood surface downward is floated on the fluid. The length of time

*Seventy per cent alcohol is made from methylated alcohol, which must be free from naphtha, by diluting 100 measures to 121; from absolute alcohol (0.793) by adding 31¼ volumes of water to 100 volumes of the alcohol. In working in analine dyes it is best to avoid the use of methylated alcohol.

which should be allowed for the staining is, I think, generally understated, and depends on the temperature. I generally use an incubator with a temperature of about 98° F., and at this heat a quarter of an hour to about twenty minutes amply suffices; at room temperature half an hour to two hours may be found necessary, according to the time of the year. If the preparation is an important one, it is advisable to watch the staining process by washing off the dye occasionally with distilled water and looking at it unmounted with a low power, putting it back in the dye if necessary, until the requisite degree of staining is obtained. When this has been found the cover glass is washed in distilled water and allowed to thoroughly dry, and is then mounted as a dry preparation, being kept in position on the slide by a margin of melted paraffin, brushed around it. It may be examined at once or after a period of weeks. After a little practice, the parasites can be easily picked out in such preparations with a very low power. For this purpose I use successfully a low power objective with Powell and Lealand's No. 10 compensating eyepiece. This gives me a very large, clear field, the magnifying power being 210 diameters, and the blue stained parasite stands out distinctly and boldly (although a very minute object) in the red corpuscle. When a parasite has been found it may be examined by a high power objective, an $\frac{1}{8}$ or higher, when the pigment, if present, should be seen more or less distinctly according to its fineness and distribution; but for the satisfactory examination, particularly as regards the stage of development of the parasite and the distribution of the pigment granules, an oil immersion objective should be used.

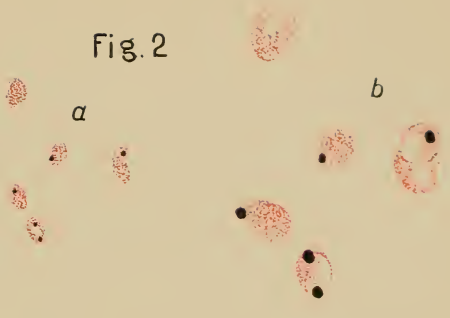
"For the size and form of the parasite and its relation to the red corpuscle, and for the presence and condition of the pigment, the use of methylene blue and eosin is sufficient.

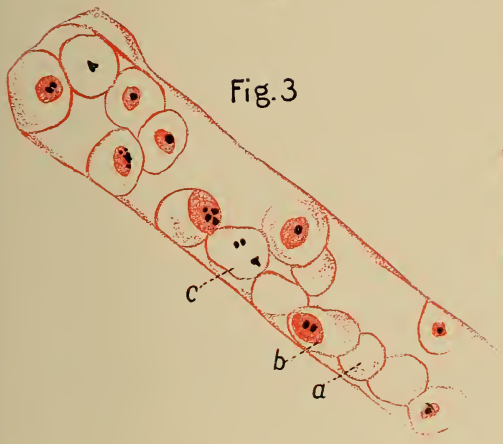
Eosin is particularly useful in showing the poverty in hæmoglobin of the large, swollen, red corpuscle which harbors the tertian parasite. In order to render the detection of the parasite by this method easier to those who are beginning the work, I have thought it useful to show by definite outlines, drawn to scale, the size of the objects which have to be looked for, according to the magnifying power which is used.

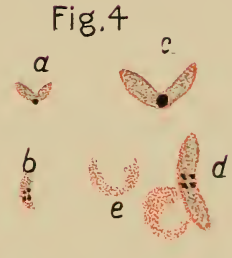
Although I recommend every observer to provide himself with apparatus which will give him a magnification of 1,000 diameters, it must happen to many to be obliged to use a lower power, at all events for a time. I have therefore made the drawings which are printed in the accompanying plate chiefly to two scales, one of 500 and one of 1,000 diameters; 500 diameters being within the reach of most, even of the commoner microscopes, if the highest system with which they are provided is of sufficient quality to bear a fairly high eyepiece. For the finer details of the structure of the parasite, more particularly of the spores, hæmatoxylin should be employed. It is by the use of this dye that Mannaberg has made a distinct advance in our knowledge of this difficult subject. The process which he recommends, although apparently somewhat complicated, is not difficult to carry out. "The dried preparation is floated for five minutes in distilled water, and after being dried with blotting paper is passed several times through a weak solution of acetic acid (a drop of acetic acid in 20 centimeters of distilled water) until the hæmoglobin disappears. The colorless preparation is then laid for two hours in the following fixing fluid: concentrated aqueous solution of picric acid 30, distilled water 30, glacial acetic acid 1. From this mixture it is placed for another

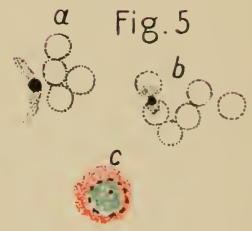
two hours in absolute alcohol, and then placed from twelve to twenty-four hours in an alum hæmatoxylin solution. Differentiation of the stain is effected by using a ¼ per cent hydrochloric acid alcohol (alcohol of 75 per cent) and then ammoniated alcohol (3 drops of ammonia in 10 cubic centimeters of 75 per cent alcohol), which is washed in 80 per cent alcohol. The preparation is mounted in Canada balsam dissolved in xylol. The process is a tedious one, and care must be taken regarding the strength of the hydrochloric acid alcohol. If the ammonia is used too strong, or for too long a period, it acts very destructively. Unless the preparation is allowed to dry thoroughly before mounting in balsam, I recommend a stronger, say absolute, alcohol. Some of the most interesting appearances shown in Mannaberg's book, such as those in the plates 3 and 4, were obtained by this process, and these drawings cannot be neglected by any one who studies the structure and development of the parasite. Dr. Thin also says:

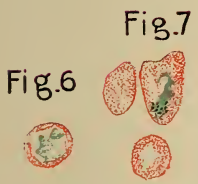
"The utility of examining blood for the malaria parasite in cases of fever is too evident to be enlarged upon, but its utility is much greater in some classes of cases than in others. It does not require a microscope to diagnose or treat successfully a case of classical ague, or even many of the cases of irregular and remittent fevers which are due to malaria, although microscopical observation is much more important in them than in tertian and quartan fevers. It is certain, however, that even in malarial countries many cases of fever are diagnosed and treated by skilled and experienced observers as of a malarial nature, which are really due to other causes. There are cases in which a considerable time must elapse before the diagnosis can be made from the











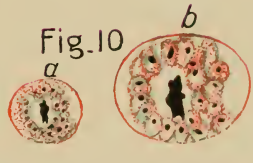


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PLATE 4

EXPLANATION OF PLATE IV.

FIG. 1. A red blood corpuscle from fresh normal blood, drawn to scale by camera lucida, to form a standard for comparison with the figures of dried and stained blood which follow. (The color of the fresh blood is not reproduced), *a*, × 500 diameters; *b*, × 1,000 diameters; and *c*, × 2,000 diameters. (In this and the subsequent figures the objectives employed were, for the 500 diameters, a dry objective by Powell and Lealand; for the 1,000 diameters Powell and Lealand's apochromatic $\frac{1}{12}$th oil immersion with the No. 10 eyepiece, or the $\frac{1}{20}$th apochromatic oil immersion of the same makers with a low eyepiece; for the 2,000 diameters the $\frac{1}{20}$th with No. 10 eyepiece).

FIG. 2. Blood from a dried preparation stained in hæmatoxylin and mounted in glycerin; chronic irregular fever; sporulation in internal organs. The blood, which is from the finger, shows the red corpuscles being attacked by the parasite in its earliest stage. In one corpuscle two parasites are observed. The part chosen for drawing contained an unusual number of affected corpuscles, *a*, × 500 diameters; and *b*, × 1,000 diameters.

FIG. 3. A blood vessel from a section of a portion of brain given to me by Dr. Bignami from Prof. Marchiafava's laboratory in Rome. The section which was cut in paraffin, was stained in hæmalum and cochineal. *a*. A red corpuscle containing no parasite. *b*. A red corpuscle containing an eccentrically situated parasite; *c*. A red corpuscle containing two parasites. The protoplasm of the parasite is stained a deep pink, the nuclear elements a very dark purple. (In this and similar preparations the resolution of the stained nuclear elements into separate minute spheres depends to a considerable extent on the excellence of the objective used. The darkly stained nuclear elements of the parasite as shown in this figure must not be confounded with pigment. No pigment was observed in the section, and the case was therefore probably one of quotidiana perniciosa caused by the pigmentless quotidian parasite described by Marchiafava and Bignami.

FIG. 4. The crescent shaped form of the parasite found in the blood in irregular chronic fever. The dried blood from the finger was stained by hæmalum in excess, and subsequently partially decolorized by weak hydrochloric acid. *a*. The parasite with arc shaped line indicating the contour of the red corpuscle in which it had developed. *b*. Free parasite × 500 diameters, *c* and *d*, the same × 1,000 diameters. *e*. Red corpuscles in the same preparation × 1,000 diameters.

FIG. 5. Crescent shaped parasites in the blood, sealed in solution of methyl green in 1 per cent acetic acid. The color of the methyl green is not shown in the plate. *a*. A crescent sealed in the solution, to which a little glycerin has been added. *b*. A crescent in the solution without glycerin, drawn shortly after being sealed. Many crescents seen in this staining solution have the shortened, mutilated appearance shown by this one. The red corpuscles, which are much shrunk in size, are quite colorless, and are indicated only by very fine lines, much fainter than is shown in the drawing. The magnification in this figure was not accurately estimated, but that of *a* is about 700 to 800 diameters, and that of *b* nearly 1,000. The red corpuscles in *b* had shrunk more than those in *a*. *c*. A red corpuscle containing a round parasite with peripheral pigment from a case of irregular fever with the formation of crescent bodies. Sporulating forms were not found in blood from the finger. This drawing is shown under this figure because it is typical of forms that are found (in my experience, sparingly) in cases with crescent formation. The drawing was not to scale by camera lucida, but the magnification is slightly over 1,000 diameters; eosin and methylene blue.

FIG. 6. A red corpuscle containing the tertian parasite before the formation of pigment; eosin and methylene blue; the parasite is stained blue. × 1,000 diameters.

FIG. 7. A red corpuscle containing the tertian parasite with the beginning of pigment formation and two normal red corpuscles beside it; eosin and methylene blue. The larger size of the corpuscle which contains the parasite is to be noted. × 1,000 diameters.

FIG. 8. A red corpuscle containing the parasite in a more advanced stage of pigment formation. Note the serrated appearance at one part of what remains of the red corpuscle, caused by the destructive action of the parasite. × 1,000 diameters; eosin and methylene blue.

FIG. 9. The tertian parasite with spore formation and central pigment. The number of spores is unusually small for the tertian parasite. Note the disappearance of the hæmoglobin from the red corpuscle and its comparatively large size as compared with the normal corpuscles around it, which appear to have been considerably shrunk by the drying process, × 1,000 diameters; eosin and methylene blue.

FIG. 10. *a*. A red corpuscle containing the tertian parasite with spore formation complete; hæmalum and eosin. The nuclear element of each spore is stained by the hæmalum. × 1,000 diameters. *b*. The same × 2,000 diameters. Note the contour of the perfectly colorless red corpuscle, and that in the parasite between the spore zone and the mass of central pigment there is a structureless substance less deeply stained than the spores.

FIG. 11. The tertian parasite. A group of spores just separated from the corpuscle; hæmalum and eosin. The position of the central mass of pigment shows that the relative position of the spores has been comparatively little changed by drawing the one cover glass over the other in making the preparation. Each spore contains a distinct hæmalum stained nuclear element. *a*. × 1,000 diameters. *b*. × 2,000 diameters.

FIG. 12. Sporulating form of the quartan parasite stained by alkaline (Loeffler's) methylene blue. Sporulation is complete, with central pigment. *a*. × 500 diameters; *b*. × 1,000 diameters; *c*. × 2,000 diameters. Note in *b* and *c* that there is still a narrow rim of corpuscular substance preserved, that the spores are the usual number in this parasite (8), that the corpuscle which contains the parasite is hardly larger than the unaffected red corpuscles which surround it, and there is an absence of the zone between the spores and the pigment which is seen in the tertian parasite.

FIG 13. *a*, Phagocyte white corpuscle containing small pigment spheres. The patient was suffering from chronic malaria acquired in Bombay. He was weak and anæmic, his spleen was slightly enlarged, and at considerable intervals he had slight fever lasting for a day at a time. I found no parasite in the blood from the finger, but several pigment bearing white corpuscles. The figure was drawn by camera lucida from a sealed preparation of fresh blood the day after it was prepared; × 1,000 diameters. *b*. White corpuscle containing rod shaped blocks of pigment from blood preserved in Pacini's fluid, kindly sent me by Surgeon-Major Sharp from Sierra Leone. The patient was said to be suffering from ague, and when the blood was taken his temperature was 105° F. No parasites were found in the red corpuscles, but there was an unusual number of white corpuscles heavily laden with pigment. (Not a camera lucida drawing, but magnifying power probably about 1,000 diameters.) *c*. Phagocyte white corpuscle from dried preparation of blood from a case of chronic irregular fever. There were crescents in the fresh blood. The dark outline on the left, which did not take on the eosin color so deeply as the rest of the corpuscle, contained minute spheres of pigment, and seemed to be formed by extremely minute powdery pigment; the particles of which were too small to draw, and is suggestive of a parasite, probably a crescent, enclosed in the corpuscle; eosin and methylene blue; × 1,000 diameters. *d*. A white corpuscle containing pigment spheres in a blood vessel in a material spleen. For the section from which it is taken I am indebted to Surgeon-Captain Duggan, who prepared it in the British Institute of Preventive Medicine; × 1,000 diameters.

clinical symptoms alone. I conceive that it is very important to use the microscope in cases of so-called 'fever from exposure to the sun,' and I am afraid that occasionally cases diagnosed and treated as sunstroke are examples of pernicious malaria with coma. In all doubtful cases of fever, therefore, occurring in countries where, for example, the diagnosis may lie between typhoid fever and malaria, and 'sun fever,' the microscope should be used and it should also be employed for diagnostic purposes in many cases of coma with acute febrile symptoms which might perhaps more naturally suggest sunstroke."

This short outline of the diagnosis of malarial diseases by the microscope will enable any intelligent physician, possessed of a microscope, with a compensating eyepiece and an apochromatic immersion objective, magnifying about 1,000 diameters, and the essential accessories, and who has acquired the necessary technique of their use, to differentiate at once between these diseases as a class and typhoid fever. This will effectually eliminate the commonest of all errors in diagnosticating typhoid fever, if the observations of the future sustain the hopes and predictions of the present; for there are those who, unable to find the parasite or even the pigmented leucocytes, insist that they are not always present even in fatal attacks of malarial fever, and they would bury Laveran, Golgi, Mannaberg and Thin, the discoverers and investigators in unhonored graves along with the plasmodiæ malariæ.

Typhus Fever.—Notwithstanding the fact that typhoid and typhus fevers have so often been confounded, the features which distinguish them are usually better defined than were those which distinguished the former

disease from the continued forms of malarial diseases prior to Laveran's discovery. For while the bowels may be constipated in typhoid, and diarrhœa may be present in typhus fever, these occurrences are comparatively rare and in such instances some of the symptoms of the latter disease are apt to be prominent enough to guard the careful physician against the danger of making an erroneous diagnosis. If there be marked tenderness in the right iliac fossa, epistaxis, headache, etc., typhoid fever should be suspected even though the bowels were constipated.

The slow insidious attack contrasted with the characteristically sudden onset of typhus fever; the remittent type of the fever; the absence of early eruption; the presence of meteorism—of intestinal hæmorrhage—of the circumscribed pink flush seen in one or both cheeks in typhoid fever; contrasted with the absence of these symptoms and with the general dusky hue of the skin and the congested conjunctivæ of the victim of typhus fever; all make up a series of symptoms which should make it an easy matter to differentiate between the two diseases. The history of the source of the attack if known will aid the investigator in reaching a correct conclusion.

Further assistance will be obtained by noting "the principle points of distinction between the spots of enteric fever and those of typhus" as given by Murchison.

Enteric Fever.	Typhus.
1. Pink or rose colored throughout.	1. May be dirty pink or red at first but soon become reddish brown.
2. Undergo no change	2. Become gradually

Enteric Fever.	Typhus.
until they fade or disappear. Never converted into petechiæ.	darker, and are often converted into petechiæ.
3. Circular.	3. Of irregular form.
4. Isolated and few in number.	4. Numerous and adhere in patches.
5. No subcutaneous mottling.	5. Mottling common, in addition to spots.
6. Elevated above the skin.	6. Not elevated, except at first appearance.
7. Disappear on pressure, as long as they last.	7. Do not disappear on pressure, except at first.
8. Rarely appear before the seventh day.	8. Appear on the fourth or fifth day.
9. Appear in successive crops.	9. Never in successive crops.
10. Each spot lasts only three or four days.	10. Many of the spots may last to the end of the fever.
11. Never present on a dead body.	11. Often persist after death.
12. A large number does not indicate danger.	12. Direct ratio between the number and darkness of the spots and the severity of the disease.

"It is important to determine whether the lenticular spots above described be ever present in other diseases than enteric fever. . . . At the London Fever Hospital I have had occasion to examine many thousand cases of acute disease of every form, and my opinion is that an eruption which presents all the characteristics above mentioned is peculiar to enteric fever."

Scarlatina.—Although a scarlet rash sometimes accompanies early stages of typhoid fever, the two diseases should never be confounded. The sudden rise of temperature in scarlet fever forms a marked contrast to the gradual step like rise of typhoid fever. Moreover, there is rarely any sore throat in the latter disease, and its dryness should never be mistaken for the characteristic sore throat of scarlet fever.

Puerperal Fever—Pyæmia.—When typhoid fever occurs in the puerperal state it is often mistaken for puerperal fever, and sometimes simulates that disease so closely that an exact diagnosis is exceedingly difficult. The presence of rose spots, epistaxis, step like rise of temperature, indicate the one, and the profuse sweating, the rigor and the absence of the foregoing symptoms, together with the circumstances under which the attack comes on, may indicate the other.

Tuberculosis.—The most perplexing diseases to differentiate from typhoid fever are the several forms of tubercular disease.

Acute Phthisis Pulmonalis.—Since the fever in this disease is sometimes remittent—the cheeks present the same circumscribed flushes—and other symptoms of typhoid fever, they may very easily be mistaken for each other. The clinical and family history, the tympanitis, the enlargement of the spleen, the rose spots or epistaxis—when these are present, will usually enable the careful diagnostician to avoid error. If these symptoms are not found, the particular observance of the thermic line, an ophthalmoscopic examination of the eye for the evidence of tubercle in the choroid, or a microscopical examination of the sputa for the bacillus tuberculosis will give pathognomonic evidence if the disease be the latter malady; though this would not

be negatively pathognomonic of typhoid fever, as the tubercular affection might possibly be a sequel to it.

The same remarks apply to miliary tuberculosis, to tubercular meningitis, etc.

"La Grippe."—Since the invasion of this country by epidemic influenza, a few years ago, a very large number of cases of typhoid fever have been erroneously designated "la grippe;" not a very unnatural mistake—as typhoid fever when the onset is sudden and the nervous symptoms predominate very closely simulates influenza.

A correct differential diagnosis may generally be made by a careful observance of the thermic line, as well as by a careful examination of the abdomen, which although frequently distended, never presents the tenderness in the right iliac fossa, which according to my observation is one of the most constant symptoms of typhoid fever. If these symptoms fail to appear the distinction can invariably be made in a very few days, as the two diseases after the first onset usually run quite dissimilar courses.

Variola and Varioloid.—Although typhoid fever is sometimes mistaken for either of these diseases, there is little excuse for such an error. The cause of the mistake being usually a profuse crop of rose spots. The difference, however, between the characteristic eruption of typhoid fever and the acuminated eruption of variola is so marked that the two should never be confounded. The latter is hard, elevated, and presents to the touch the sensation of split peas underlying the skin, while the former, although slightly elevated, yields readily to and disappears under slight pressure.

Pneumonia.—I know of no certain means of distinguishing clinically between a true pneumonia and pneumotyphus. I have been called too often at the closing scene,

after the supervention of a fatal intestinal hæmorrhage—after a few days of illness from pneumonia—to attempt to describe symptoms which might be misleading, and would at best give no information which could benefit the patient. I can therefore advise but one course;—*treat pneumonia as typhoid fever* as long as any doubt exists as to the character of the disease.

"A Bilious Attack."—Typhoid fever is very frequently mistaken for an ordinary bilious attack—an error which may be easily avoided by careful observation of the thermic line, but like pneumonia, the initial treatment of the former should be the same as that for typhoid fever.

Acute Mania.—When typhoid fever comes on suddenly and nervous symptoms and delirium predominate, it is frequently mistaken for mania, insanity, meningitis and cerebro-spinal meningitis. In all of these instances the thermometer alone will give sufficient information upon which to base a correct diagnosis.

While it is true that obscure and atypical attacks of typhoid fever are sometimes exceedingly difficult to diagnosticate, it is also true that in its regular and typical forms, where several of its characteristic symptoms are present, it is one of the most easily recognized diseases. The careful diagnostician who has seen the patient from the outset of the disease will make his diagnosis and have his patient well on the road toward recovery, while he who strives for scientific accuracy rather than for the patient's good will be awaiting the development of pathognomic symptoms, which may come too late to avail any useful purpose, or may never come at all.

Sometimes the earliest symptom which is presented is a slight but persistent headache—a scarcely noticeable mental hebetude—a loss or even an unnatural increase

of appetite—a little diarrhœa—a little dizziness—ringing in the ears—epistaxis—weakness—chills or chilly sensations—the diluted chills of Alonzo Clark—pain in the back and limbs—the bowels may be constipated or there may be mild or copious diarrhœa. The temperature may be little above normal, the pulse sluggish or slightly accelerated.

The presence of one or more of these symptoms should put the physician on the qui vive, for at this time, if never after, the patient may be cured—the disease aborted. The symptoms may now become more pronounced, insomnia supervenes, the temperature rises, usually by step like gradations and a degree or two each day, being from one-half to two or more degrees higher in the evening than in the morning.

The period of highest elevation of temperature as also of greatest frequency of the pulse is about 8 o'clock in the evening and both are nearest normal from 7 to 9 o'clock in the morning.

The symptoms generally increase in severity so very slowly that neither patient nor family realize the magnitude of the mischief that is being done during the first week or two of the disease. It is unusual for the patient to be confined to the bed and he may be able to attend to ordinary business or even perform hard manual labor for six or eight days after he realizes that he is ill. Moreover it occasionally happens that the disease makes such slow and insidious inroads on the general health that before the patient feels sufficiently indisposed to seek medical advice he has passed beyond the reach of medical aid. (See letters of Dr. Dodge for the report of a case in which the patient worked at hard manual labor, not knowing that he was sick until within a few

hours of his death as the result of perforation.) This case is one of great interest because he walked into the hospital one day, having chopped wood in a lumber camp the previous day, and died on the following day, and the autopsy furnished the first positive proof of the character of the disease, several ulcerated Peyer's glands and a perforation in the center of one of them. A case of typhoid fever of moderate severity, running a typical course and coming under observation on the eighth day should present about the following conditions: range of pulse from 100 to 120, almost invariably accelerated toward evening, when the temperature should be 103.5° to 104.5° Fahrenheit, and a degree or two lower in the morning, but both temperature and pulse vary greatly in the same patient; but while the latter is generally weak and compressible it is sometimes quite the reverse.

The skin is hot and dry, especially in the afternoon and early part of the night. Although the bowels at the outset of the disease may have been, and more rarely may still remain constipated; there will usually be a more or less copious diarrhœa of ochre colored watery stools. This may however have been a precedent condition and there may be left only its history. There is complete anorexia and vomiting of a bilious character. The tongue presents a furred center and red margins and tip. The urine is scanty, high colored and strong; the abdomen is slightly distended and tympanitic ; palpation produces gurgling in the right iliac fossa; there should be slight tenderness also. Rose spots appear, fade away and reappear in successive generations. The headache, pain in the back and limbs give place about the middle of the second week to delirium, generally mild and at first appearing only at night, but gradually becoming wilder

and lasting throughout the day. The splenic dullness, if previously observed, becomes more apparent; sordes accumulate on the teeth, and the tongue becomes dry and brown, and sometimes deeply fissured; the diarrhœa becomes more profuse; bed sores form over the bony prominences; the pulse grows weaker and sometimes becomes dicrotic. Emaciation goes on to an alarming extent; low muttering delirium supervenes and intestinal hæmorrhage, perforation, peritonitis or coma and death may follow.

Another equally typical case may present all, or a majority of these symptoms in a milder and modified form, may run its course to the middle or end of the second week, the patient being so little sick that no alarm whatever is felt, but while lacking some of the elements of the danger of the preceding case, it is quite as liable to intestinal hæmorrhage or perforation and death, as is the sicker prototype. How frequently the daily bulletin has announced the patient "doing well" "progressing nicely" "temperature and pulse good" "feeling better to-day," until the friends are beguiled into false security from which they are rudely awakened "because the symptoms have taken an unfavorable turn."

Therefore every physician should remember that while cases, which at the outset present exceedingly severe symptoms sometimes recover, those which offer the mildest symptoms, not infrequently develop grave lesions when everything seems to be going smoothly and the patient seems to be reaching safe ground. It is safe to say that no matter how mild the symptoms, the typhoid fever patient is in serious danger from the time Peyer's glands have become inflamed until the last ulceration is healed. If but one ulceration exists, and that

ends in perforation—without surgical aid—death is practically as certain as if all of the glands of the ileum were necrosed.

A very large number of cases of typhoid fever never develop these fatal lesions or the "typhoid state" but it is far the most treacherous and fatal of all of those which we now recognize as preventable diseases.

The results of the antiseptic treatment of typhoid fever when instituted at the outset of the disease have emphasized the importance of an early and exact diagnosis, and ought to revolutionize the teachings of the medical colleges and text-books on this point. As long as the "expectant method" of treating the disease could be justified on the assumption that there was no better way—at least none that was feasible in private practice—it did not much matter when the diagnosis was made, so that it was gotten ready for the death certificate—which is unfortunately not always done.

Dr. James H. Hutchinson says: "In the doubt and obscurity which generally envelopes the diagnosis of the disease when the physician is first called upon to treat it, it is impossible to lay down any positive rules for the treatment of typhoid fever at its commencement."

The author of the article on "Typhoid Fever in Pepper's System of Medicine" is not the only instructor or practitioner who has found it necessary to await the development of pathognomonic symptoms before formulating a course of treatment. This has long been, and is yet the usual custom. It would be impossible to conceive of a more pernicious and reprehensible practice, and yet it is exactly the course pursued by the distinguished physicians who attended H. R. H. the Prince Consort of England so long ago.

Typhoid fever has blighted many homes—has broken many hearts—and many sad chapters could be written on its history. What could be more heart rending and dolorous than the story of the far reaching misery and desolation resulting from the last illness and death of Queen Victoria's Royal Consort.

I have dug up the history that I may most emphatically emphasize the importance of making an *early* diagnosis, and because the failure of those learned men—the flower of English Medicine—to make an *exact* diagnosis until within eight or nine days of the death of their royal patient, was fraught with such direful results, and because this practice of yesterday conforms precisely with the course pursued by so many physicians of note to-day, in this land of progression, in these days of devotion to bacteriology and sero-therapy; indeed, it is the exception rather than the rule that a positive and exact diagnosis in typhoid fever is made early in the course of the disease or that any effective treatment is instituted in time to benefit the patient.

The rational supposition would be that the cause of the illness of Prince Albert, this man so great and good, most dearly loved during life, most deeply mourned after death, practically the greatest ruler on earth; with all the resources of the greatest and most enlightened nation at his disposal; with all of the talent of the medical profession of the whole civilized world at his command, would be correctly diagnosticated at the earliest moment possible. "But he was so sick on the 12th of November, that the queen noticed it." Eleven days passed and on the 23d and again on the 24th "his mind wandered strangely." "He was sleepless and his appetite was lost." On the 27th he went to see his son, the

Prince of Wales, at Sandhurst, "who found him greatly out of sorts." "On the 28th he was still worse."

On the 1st of December Sir James Clark and Dr. Jenner "were disappointed at finding him so very miserable." On the second of December after a night of "shivering and sleeplessness" he sent for Dr. Jenner, who "found him suffering great discomfort and much depressed." "The symptoms of what might prove to be 'low fever' were beginning to be more marked," when the Prince heard of the death of his royal cousin, the King of Portugal and his brother, both of whom had died of typhoid fever at this time, he said he was glad that his disease "was not typhoid fever," because he knew he could not survive an attack. The Queen could not bring herself to believe that her husband was seriously ill, and on the 3d her opinion was confirmed by that of Sir James Clark, and on the fourth he still "consoled the Queen with smooth prognostications," and Dr. Jenner told her "the Prince must eat for he was simply starving to death." On the 5th Sir James Clark "reported him somewhat better." Up to this time the prognosis given, and the fact that Dr. Jenner insisted that he must eat, very clearly indicates that the true character of his disease had not even been suspected. On the 6th of December the Queen's diary contains the following entry: "The doctors declared that they had all along been watching the patient's state suspecting fever, but unable to judge what it might be or how to treat him until that morning . . . that the fever must have its course, viz., a month . . . that he was not alarmed—that there were no bad symptoms, but he could not be better till the fever left him." . . . "They thought him less well and feverish," "the char-

acter of the disease was now clear beyond a doubt, and the examination revealed physical signs that it was gastric or 'low fever.'"

Martin says: "Above all things the Prince seems to have had no doctor attending him who was capable of recognizing the gravity of the disease in time." Sir James Clark, Dr. Jenner, Dr. (later Sir Thomas) Watson, Sir Henry Holland and Dr. Brown, of Windsor—these learned and distinguished gentlemen were not more likely to blunder than the best of their confreres of that day (or for that matter of the present) and this narrative of the last illness of this royal Prince, "who, in the prime of manhood and full career of his usefulness, was removed by death," sounds much like the accounts of many cases treated very recently. Indeed the mode of procedure can hardly be said to have done injustice to the teaching or the practice of the present day.

For a failure to make a diagnosis of typhoid fever in time to be of the slightest benefit to the patient is far more common than one who had not made a study of the subject would believe. This same course was pursued and with like results so frequently about this time as to throw nearly every Court in Europe into mourning deep and doleful. It was repeated ten years later in the case of the Prince of Wales, who however happily did not die.

A repetition was seen last year in our own capital, when the Chairman of the Ways and Means Committee, at the time the most prominent political figure in the United States, stood up in the halls of Congress, speaking day after day, when he was really on the brink of the grave, which he barely escaped. About the same time the wife of the President of the French Republic, the head of a

noble English house, and many others whose rank and condition were evidence of their ability to command the best professional advice, were dying, or lying very low, the prey to errors of diagnosis or treatment.

Dr. Eliot, of New Haven, says: "Let me remind you that a little less than nine years ago, Frederic Mahomed, one of the assistants of Guy's Hospital, London, died at the age of thirty-five years, of enteric fever, and that a few days before his death, while his temperature was 104°, he left his residence and went to the hospital to see a student ill with rheumatic fever." His death "may serve to emphasize a point of the very greatest importance in this connection; it is the necessity of making a very early diagnosis if one wishes to treat enteric fever with the best results. If the brilliant young assistant physician of Guy's Hospital had realized that he had this disease he would probably have remained in bed, and very likely would have recovered, to continue his investigations in cardiac and renal pathology."

In alluding to one of the fatal cases, Osler, the oracle, says: "We did not really appreciate that he had typhoid fever during the first week in hospital. The temperature chart was very deceptive, and we thought it might be an anomalous form of malaria; but repeated examinations of the blood were negative. After the enlargement of the spleen and the appearance of a few rose spots rendered certain the diagnosis of typhoid fever, the temperature did not rise above 102° until the thirteenth day in hospital. . . . . He took in all 114 baths. Death occurred from perforation on the fifty-first day."

While I am writing, hundreds are lying in the "valley of the shadow of death," because, as the diary from which I have quoted says; "they seem to have no doctor

around them capable of recognizing in time the gravity" of the most fatal of all of the curable and preventable diseases.

The reasons given in the extract from Pepper's "System of Medicine," for not specifying explicit rules for the treatment of the earliest stages of enteric fever, viz., the doubt and obscurity which generally envelopes the diagnosis of each case, when the physician is first called to treat the patient, are the very reasons why the diagnosis should be made at once, and every doubtful case be regarded and treated as typhoid fever.

Many if not quite all of the pathognomonic symptoms of typhoid fever are evidence of already existing anatomical lesions; they are consequently valueless as a guide to the physician, whose aim it is to abort the disease. Although he may be able to succeed occasionally after their supervention, in a malady of so insidious a character as typhoid fever, it would always be unwise and it would sometimes be a fatal error to await their development. Therefore the physician who would avoid having a death from typhoid fever, must ever be on the alert lest the disease pass beyond his control.

He should waste no time treating a case of this disease for any of the milder ailments, and since the loss of hours in applying proper treatment for typhoid fever would sacrifice more human lives than would the loss of days in malarial fever, no physician should ever be guilty of the stupid and criminal blunder of treating a case of typhoid fever as malarial fever, a practice which cannot be justified by any course of reasoning. It deprives the physician of the golden opportunity to abort the disease. It condemns the patient to a longer duration of illness. It places his life in jeopardy, and for what? The

credit to the physician of having made an absolutely correct diagnosis. What does the patient care for the physician's reputation, or what the disease is called, so long as he is cured of it in the shortest possible time and with the least discomfort and danger? I am aware that the difficulty of making a correct positive diagnosis in atypical forms of typhoid fever are sometimes insurmountable. In such cases as in all others the diagnosis for the purpose of treatment should be by the process known as "reasoning by exclusion" and when by this method all of the diseases from which the patient could not be suffering have been eliminated, if typhoid fever be not among the excluded, the patient should be treated for that disease.

Prognosis.—In a very large majority of persons attacked by typhoid fever, the disease comes on so insidiously, the patient during the first week perhaps scarcely realizing that he is sick, and during the second week growing worse so gradually that he, without awaking to the gravity of his condition, passes into a realm where he is incapable of caring or acting for himself, and as the friends notice only a slight change for the worse each day, they become accustomed to his state and usually fail to recognize the danger until aroused from their lethargy by the supervention of some grave condition which is intelligible to them. Under such circumstances the physician, because of the trust confided in him, is under a high moral obligation to warn the friends of the danger as soon as he recognizes the character of the disease, without awaiting the supervention of these alarming symptoms.

The prognosis in typhoid fever should always be guardedly given. We have no certain means of finding

out how long the patient has been indisposed or how extensive or severe are the anatomical lesions ; death has occurred at all stages of the sickness and from perforation and peritonitis within forty-eight hours of the time at which the patient first realized that he was ill,—from toxæmia at a period but a few hours later, from hæmorrhage on the eighth day, and extensive ulceration of Peyer's glands have been found in a patient who died on the seventh day.

The usual course of the disease under abortive treatment has been clearly stated elsewhere, but if the physician gives a rose colored prognosis he should also explain the possibility of the occurrence of all of the numerous accidents which might befall the patient. He should keep his promises well within his power of performance, and to do so, he should know the history of the condition of the patient from the hour in which he felt the least invalidism. He should cross-examine the historian with the shrewdness and cunning of the proverbial lawyer, measure his intelligence and weigh his words, make his decision, and render his verdict, with the nicety of a supreme judge, to the end that he be not himself deceived as to the duration of the patient's illness. He should examine the patient with great care, allowing no symptom to escape his observation and even then promise too little rather than too much. If the patient has been ill but a day or two, the disease will be easily and should be quickly aborted. If he has been ill four, five, six or seven days and the disease is running an ordinary course, it can usually be aborted in from five to ten days, and the physician who has had large experience with the abortive treatment will feel that he is speaking within due bounds when he gives a prognosis in accordance with these facts.

Should the patient have been indisposed longer than the seventh day when first seen, no promise of speedy convalescence should be made. Hence it will be apparent that it will be from the general practitioner in private practice that must come the evidence that typhoid fever can be aborted, because the patients are usually beyond the reach of abortive medication when they are obliged to enter a hospital.

PROPHYLAXIS.—The conservation of the health of the people from the dangers of typhoid fever, as well as from those of many other diseases, is best secured by giving them an uncontaminated water supply. The fact that polluted water and typhoid fever occasionally holds the relationship of cause and effect has long been known, but the intimacy of their connection is not to this day fully recognized. While I am writing, there is appearing in successive issues of The Journal of the British Medical Association, a series of articles under the caption, "Water-borne Typhoid" from the pen of its distinguished editor, Mr. Ernest Hart, which are destined to do much good, by emphasizing the importance of pure water in the prevention of this disease. The author has collected and tabulated the principal facts of the occurrence of 206 outbreaks of this malady, in Great Britain and Ireland, which were disseminated directly or indirectly by water. All, with one exception, of the instances in which the water was the indirect cause of typhoid fever, were cases in which polluted water had been used to adulterate milk, or to rinse the cans. The one exception being that of a family, ten in number, all of whom had more or less prolonged attacks of enteric fever, which were the result of using the milk of a cow that had nothing to drink save "mere sewage." "The cases lingering on for months,

while the cow was herself getting thinner and thinner, at last refusing to graze. After she was got rid of the disease disappeared from the house, but convalesence was tardy, though ultimately complete." "But during the tedious stages of the illness, one prominent feature was that of partial convalescence 'by fits and starts,' one day cheerfulness, another day lassitude, first playfulness, then a desire for rest."

To strengthen my comments on this terrible condition of things I will quote Mr. Hart, who says:

"My study of the subject dealt with in this report has led me very strongly to support the theory that sees in the soil the natural habitat and breeding ground of the bacillus of typhoid fever outside of the human body. This belief in nowise lessens my regard of the disease as being largely caused by water, rather the reverse." He further says: "Certain it is to my way of thinking that the essential element in the prevention of water-borne typhoid fever is cleanliness. All that goes to cause pollution of the soil tends to foster the disease. No point is so strongly or so persistently brought in the history of typhoid fever occurrences in our country as that dirt and disease go hand in hand. Only in the case of rivers, does man seem to place his excrement directly into his own or his neighbor's drinking water, but he does not scruple in too many instances to so dispose of his filth that it must in the natural order of things find its way to that drinking water. It is not alone in our rural and sparsely populated districts that such disposal takes place; it is just as common to see people harboring their filth in proximity to dwellings and local water supplies in our towns. These abominations which to-day persist in so many of our towns—leaky and huge midden privies,

uncovered and ill constructed ash pits, cesspools permitting soakage of their contents, no one knows where—all these and more are the accompaniments of daily life in scores of towns. And where town populations have the good sense to so dispose of their filth, as not poison the air they breathe or their local wells, too often we find them in their selfishness and negligence, endangering the water service of a vast aggregation of people in some adjacent city, or borough by so ridding themselves of their excrement as to pollute a gathering ground or stream, or river used for purposes of domestic water supply."

One of the greatest dangers is the pollution of the wells in the suburbs of cities in our smaller towns and in the country, by outside privies or other like abominations. In this connection I again quote the words of Dr. Hart, which are quite as applicable to these United States of America as to England.

"Wells from a subsoil liable to pollution should in nowise be made use of as sources of water supply. The soil on which many of our towns are built has been subjected to gross contamination for many years, and it is not to be thought of as likely that the mere abolition of cesspools, and so forth, will at once render safe the abstraction of water from wells sunk in their proximity. . . . It is obvious, however, that many wells to-day in our country are not only so circumstanced as to seriously threaten the health of the consumers of their contents, but also that the wells are constructed in such a manner as to permit of soakage from surrounding soil into them, both surface and subsoil drainage. It should, therefore, be the aim of all sanitary bodies to secure the internal lining of wells being so finished as to prevent the ingress of water from any questionable source. . . The further danger

of contamination of well water by reason of rain storms and resulting floods is one to be thought of, and calls for the proper construction of well mouths, lest they be subjected to periodical overflow by surface water of polluted character."

In regard to the use of the water from wells I shall quote a few remarks from "The Report on Typhoid Fever in the District of Columbia, submitted by the Medical Society of the District of Columbia to the Committee of the United States House of Representatives."

"The drinking of the infected water of wells has long been known to be a mode of propagating typhoid fever. If the soil of the city is receiving a considerable amount of the excreta of typhoid cases—if much of that soil is badly drained and wet with returned sewage—is it possible to avoid the danger of fouling the well water? It may be assumed that where there are the largest number of pumps there is the largest consumption of well water; that well water is used most largely by the poor, and in those quarters of the city where the water and sewage connections are fewest; the soil underlying the city is being constantly impregnated with human excrementitious matter, and with all micro-organisms therein contained, and that the water of wells liable to be contaminated with such material is being constantly and generally used as drinking water by the people. It is not a violent assumption that the well water thus consumed is infected and dangerous to health. It is a matter of chemical and bacteriological demonstration. As sanitarians we must condemn the whole system and advise an early abandonment of all wells as the only solution of the question."

The lesson of the experiences of Vienna should be

accorded some attention. "From 1851 to 1874 well water of an impure character was used to a large extent. During this time the deaths from typhoid fever ranged from 10 to 34 annually in every 10,000 of the population. In 1874 spring water of great purity was introduced and the well water of impure wells given up. The annual mortality rate immediately fell to 5, and in three subsequent years to 1.1 per 10,000 of population. A good sewerage system was in existence long before this, but it had no effect in reducing the mortality, as sewerage without the abandonment of the drinking of infected well water is without effect."

Mr. Hart in his superlatively excellent and inimitable report says: "What have the pages of my report shown? They have shown typhoid fever caused and spread in a variety of ways by the agency of water; they have testified to the fact that water can become polluted at its source, on its way to the consumer (alike before and after entry to the distributing mains), and within the precincts of the domestic dwelling. We have seen outbreaks caused by polluted wells, by sewage contaminated rivers and streams, by water services which have received the drainage of manured fields, the sewage of whole villages, and innumerable excremental pollutions over the areas of the gathering grounds; by careless laying, in close proximity and in badly jointed fashion of water mains and sewers (the former even passing through the latter); by washing of milk cans with polluted water, by the mixing of milk with equally polluted water, and by numerous other ways."

The time-honored practice of polluting our rivulets, creeks, rivers and lakes by pouring into them all excrementa for equally civilized and refined human beings re-

siding further down their courses to drink will be regarded by future generations with amazement and disgust, and fortunate indeed will it be for us, if in their charity they see any excuse or palliation for so criminal and barbarous a procedure.

This great basin of the Mississippi Valley (bounded on the north by great inland seas of purest water, dotted all over with springs, veined everywhere by the ramifications of streams, forming great rivers of water, every drop of which would be as pure and palatable as the "Fountain of the Virgin," were it not for man's filth which we have poured and still continue to pour into them) should and would be as free from typhoid fever as it is to-day from cholera. But this foul contamination has made the disease man's most dreaded enemy all over this princely realm.

Typhoid fever prevails in the town in which I am now writing, because the defilement and defœdation, the offal and carrion and fecula from the dunghills and quagmires and various other putrefying and festering sinks of corruption in the two miles of the shore of the meandering little shallow river, whose waters creep sluggishly down to the intake at the water works, collecting on its way all that is reeking and stinking and vile along its banks, (above which are the homes of a dense population, without sewer connections), from the sewers and washings from the numerous towns in the valley above, and is then pumped into the water mains for 40,000 people to drink.

Because of similar circumstances the city of Pittsburg has at present many hundreds of cases of typhoid fever, with new cases reported at the rate of ten per diem.

These object lessons should teach the sanitary authorities the importance of so disposing of human excrementa that the inhabitants of the cities need not imbibe in the water the noxa from the sewage from the cities, towns and the extensive country drained by the water courses in their vicinity.

At this point I will quote what Mr. Hart says as to the remedy of the spread of typhoid fever. "I would suggest ridding the country of cesspools in the midst of towns, and would also see cesspit middens removed from off the face of the earth."

And again he says "all midden privies and cesspools in towns should be abolished by law, feeling that these disease disseminating abominations, as we permit them to-day are annually costing the country enormous sums by these very qualities of disease provocation. To this end I would see that the statutory duty of sanitary authorties to make provision for proper sewers* for their districts, enforced in all cases where sewage is practicable. . . . It will be necessary also, that the old disused forms of excrement disposal be done away with so as not to prove dangerous by reason of their condition at the time of abolition. So I would see the application of some powerful disinfectant to the receptacles, when emptied finally, as well as of the complete filling, in of the space occupied by them, in such manner that no danger shall accrue to the water supplies by reason of future soakage of filth left in the middens, etc."

We should do all that our author suggests, but we should go much farther. No city, town or village should be allowed to pour her excrementa laden, poison bearing

* Instead of sewers Mr. Hart should have written proper and efficient garbage crematories and sewers for drainage.

sewage into any lake, river or stream. Pittsburg should not be required to drink the sewage of cities situate above her in the valley, nor should she be allowed to thrust her corruption on the people of Cincinnati, and the hundreds of other cities and villages along the banks of the beautiful rivers. At the present time we may well say "distance lends enchantment to the view." Our water ways should not be converted into sewers conveying disease and death to the people. Each brooklet, and rill, and mountain torrent should gush, each lake, lagoon and estuary contain, and each aqueduct, conduit and canal overflow with pure and innoxious and potable water with which to supply man with a wholesome drink to quench his thirst, and in which to obtain wholesome fish for food, which we cannot take from impure water. The air wafted over their surfaces should be cool and sweet and salubrious, instead of the veritable tornadoes, reeking with the stench that now makes the vicinity of so many of them only places to be avoided.

For all of the various ways in which water is polluted, some remedy must be found. Think of the conditions of the cities, whose populations are now thoughtlessly drinking water polluted with human excreta, should cholera invade our shores, and yet typhoid fever is a little more slowly but just as surely destroying our people, and in the most disgusting way—for the presence of this disease is evidence that the patient has taken into his system a product of human excrement. Typhoid fever is a preventable malady. Is it not the plain duty of the Congress of the United States to adopt some measure to arrest the wholesale pollution of the drinking water of the country?

The administration which rises above the petty affairs

which so often engage the attention of our Statesmen, —grasps the full import of this very important matter, and creates a new department of the Government of the United States—the Department of Public Health—will merit and receive the blessings of the people.

It should be the first great duty of this "department" to prevent the occurrence of a disease which is known to be preventable, which has been practically abolished in some of the capitals of Europe, and when water and soil pollution have been arrested will be abolished everywhere. If the causes of its persistence is known, if, above all, these causes can be removed—and they can—it is our part and duty to make the facts public and to arouse public attention to the necessity and urgency of the demand for action.

A Secretary of Public Health on his induction into office, would find abundant occupation worthy of the most brilliant intellect, and demanding the highest executive ability, and not the least of his duties would be the prevention of water and soil pollution. Give all of the people of all of the land potable water, untainted with human excrement, and typhoid fever and cholera would be unknown. And only the strong arm of the general government through a Secretary of Public Health can do this. But propose to the Congress of the United States the creation of such an office, and some cold, calculating member—some guardian of the treasury—forgetting all the grief and sorrow and suffering that these diseases cause, would ask if this secretary, which in the name of humanity we demand, could earn his salary.

It is impossible to answer the question with all of its true force because we have no available statistics, as to the prevalence or mortality from typhoid fever outside

the larger cities, and the editor of the Journal of the American Medical Association, Dr. John B. Hamilton, whose knowledge of the distribution of diseases and of sanitary science is probably unexcelled says that typhoid fever is the bane of the rural districts, therefore the statistics of cities do not do full justice to the subject. In measuring the cost of an epidemic of typhoid fever, Dr. Osler says: "Cold lifeless things, figures make no more impression on the ordinary mind than would the enumeration of the days of the year; not more also does the statement that at an estimate of an average of six weeks illness to each case, there have been from 1888 to 1892 (inclusive) 82,512 weeks of lingering illness, about 1,600 years.

"When beneath untouched lintels the destroyer, *æquo pœde*, enters our own door, in weeks of suspense, if not in the anguish of loss—needless loss—such as has been felt in 1,146 families of this city within five years—then only can be realized to the full the bitter penalties attached to the transgression of all well-known sanitary laws.

"The direct money loss in the community from typhoid fever alone during the past five years may be readily estimated. The loss in wages, the expenditure on the attendance upon the sick, and the cost of the feeding may be placed at the very low average of $10 a week, which would make a total loss of $825,120 for the five years, above $165,000 a year, to say nothing of the yearly loss of 229 lives—lives too at the period of greatest value to the State."

Dr. Munro, medical officer of health for the county of Renfrew, England, gives an approximate cost of an epidemic, which occurred some years since in Mid-Ren-

frewshire. "There were 859 cases, out of which seventy-four were fatal. The average cost of hospital treatment was about £8 15s., ($41.22) on which figure Dr. Munro puts the average cost of treatment all round at £5 ($24.20) per head, a figure which seems certainly well within the mark. From data to which he has had access, he puts the average wages lost to the patients at £3,291 ($15,928,44). The cost of funerals is taken at £5, ($24.20) and the capital value of a human life at Farr's low figure of £159, ($769.) The total pecuniary cost of the epidemic to the community of Mid-Renfrewshire was accordingly £21,496, ($104,040.64), or just over £25, ($121.00) for each case. These figures are all calculated on the very lowest scale, and no doubt were in fact exceeded. If local authorities could realize such figures they would see that, quite apart from questions of sentiment or moral duty, no expenditure could yield a better interest on the investment than that which is bestowed on the provision of pure water supplies and the establishment of isolation hospitals and adequate means of disinfection."

During the last five years, 1889-94, there have occurred in Chicago from typhoid fever about 5,655 deaths, allowing ten cases of the disease for each death and applying Osler's estimate of six weeks' illness, that city had 56,550 persons suffering an aggregate of 339,300 weeks or 6,525 years of sickness; if the loss in wages, the feeding, care and medical attendance of each one was worth ten dollars per week, there was expended on these items $3,393,000; if the funeral expenses of those who died averaged $25, and the life of each decedent from the disease—usually the young and vigorous—may be estimated at $1,000, it brings the cost of typhoid fever in this one city during the period mentioned to

the grand and enormous total of $9,189,375 and more than sixty-five centuries of "miserable" sickness.

Mr. Sutherland has calculated that the loss to Great Britain by typhoid fever for the twenty years 1861-1880 = £23,300,000 ($112,772,000). "The deaths from typhoid fever in Scotland during the ten years 1880-1889 show a gradual and tolerably regular diminution from 1,335 deaths in the former year to 795 deaths in the latter year; but this is due to bettered sanitary conditions, and not to treatment.

"Of 6,960 cases of typhoid fever in hospitals, 1,332, or 17.7 per cent, died." This is about the average death rate of Philadelphia at the present time.

I quote the following statistics from Dr. J. W. Moore's comprehensive work, "Eruptive and Continued Fevers" (1892).

Year.	No. of Cases of Typhoid Fever admitted to the Dublin Hospitals.	No. of Deaths from Typhoid Fever in Hospitals.	No. of Deaths from Typhoid Fever in Dublin Registration District.
1879.....	367	36	205
1880.....	377	25	188
1881.....	169	22	123
1882.....	202	9	135
1883.....	182	18	132
1884.....	218	29	134
1885.....	265	22	144
1886.....	263	35	129
1867.....	276	28	135
1888.....	365	44	168
1889.....	783	79	228
1890.....	636	66	185

The Cincinnati *Lancet-Clinic* on page 569 (1895) gives the following death rates for 1894 for the cities named:

DEATHS FROM TYPHOID FEVER PER 100,000 OF POPULATION (1894).

London.....16	Manchester.....25	Edinburgh...14
Glasgow.....20	Paris.....25	Amsterdam..16
Rotterdam...5	The Hague..... 2	Copenhagen. 9
Stockholm... 8	Christiana..... 6	Berlin..... 9
Hamburg....18	Dresden.....4½	Breslau.....10
Munich.....15	Trieste.....17	Vienna..... 7
Buda-Pest...15	Brussels.....27	Venice.....26
Rome.....34	Turin.....29	Liverpool....53
Dublin.....87	St. Petersburg 51	Moscow.....40
Prague.....36	Milan.....62	

There were returned to the State Board of Health for Michigan during the sixteen years 1867-1882, 7,957 cases of typhoid fever, and 2,890 deaths from the disease. In 1891 (the latest report at hand) there were returned 4,670 cases and 697 deaths.

Dr. Guy McCandless, Registrar of Pittsburg, gives the number of typhoid fever cases reported in that city in July, August and September, 1894, at 407, and in the same months of 1895, at 526, an increase of 119. The number of deaths in 1894 was 46, and in 1895 was 49.

Dr. McCandless says: "You will observe that there are more cases reported in 1895 than in 1894, with only three more deaths. I believe there are cases reported as typhoid fever in which the diagnosis was mistaken, for to my knowledge some of the cases reported were well and out in less than two weeks."* Dr. McCandless seems not to have known that some of the physicians of Pittsburg and Alleghany were during that period treating their cases of typhoid fever by the abortive method, several of them having written to me personally for directions for the treatment. If all had used

*Pittsburg Despatch of November 15, 1895.

this method scientifically instead of "some of the cases being well and out in two weeks," the average duration of illness of all cases would have been even shorter.

There were reported in the District of Columbia in the decade ending June 30, 1894, 1,611 deaths from typhoid fever. In Cincinnati, from 1868 to 1894, there were 3,935 deaths, and in Boston from 1871 to 1894—twenty-four years—there were 4,165 deaths from the disease. During the thirty-three years, 1862 to 1894, Philadelphia had 17,457 deaths from typhoid fever and applying the same low estimate already made for Chicago, it shows that from this one malady there was enough sickness in Philadelphia to cost that city $185,480,625. There were 1,047,420 weeks, or 20,142 years of sickness, or enough to keep ten persons sick from the beginning of the Christian era to the present time, with more than twelve hundred years to spare.

These statistics, incomplete as they are, are sufficient to give the reader some idea of the awful ravages of typhoid fever in the near past, and I believe when the records of 1895 are compiled they will show the latter to have been the most fatal year in the history of this disease, the preventability of which calls for the institution of some measures to arrest its devastating progress by providing for every member of the commonwealth unpolluted water to drink—but by whom?

That it is possible for the municipal authorities of the present day to do this is proven by the work of the scientific engineers of long ago—and we surely have men of genius who can do all that they have done so successfully. The Greeks of Homer's time taught of hygiene as well as of medicine. We read of Eupalinus, an engineer celebrated for the skill with which he con-

structed the works for the water supply of the city of Magara, during the reign of the tyrant Theagenes. (Circa 625 B. C.) One of the earliest forms of the aqueduct in which to convey pure water to the abodes of the people—that water which went so far toward making the Greeks the proverbially vigorous and athletic race they were—was the one on the Island of Cos, a part of which consisted of a bell-shaped chamber, built under ground in a hillside, in which to receive the water from a spring where it might be kept fresh by the air which was supplied through the airshaft.

In Athens, 560 years before Christ, cold, pure and wholesome water was brought from the hills Hymettus, Pentelicus and Parnes—the ruins of which can still be traced in the village of Chalandri, by the airshafts which were from five to six feet in diameter.

Tradition tells of the works of Empedocles, who brought water to the city of Selinus in Sicily, and there lived in Syracuse a man whose work was done for the ages—for his tunnels and pipes are still used for supplying the city with an abundance of drinking water.

No obstacle seems to have been too great for the men of this ancient day to surmount, for they tell us of the tunnel for fresh water which passed under the sea to the Island of Ortygia—and all this was accomplished successfully to conserve the health and comfort of the people. When one remembers the great achievements of the men of antiquity—looks upon the undertaking of Appius Claudius in constructing the Via Appia in the year of Rome 442, when the first attempt was made to supply from a distance the water to the City of the Seven Hills. When they built the many series of arches and pillars in order to bridge the valleys and

bring across the Campagna the water from the springs in the lofty Sabine Hills, making the aqueduct almost three hundred miles in length, erected the Porta Maggiore, through which the water was conducted in two separate channels, one above the other, and under which the traffic of the city might pass; the remains of which make some of the most striking monuments of modern Rome.

They were not niggards in those days, when the *Curatores Aquarum* had the oversight of the aqueducts and public waterways of the Republic or Empire, and their expenditures were most lavishly made but unfortunately their efforts did not seem to be appreciated, for during the middle ages these wonderful artificial provisions for the water supply were neglected to such an extent that many of the colossal creations—these triumphs in architecture—are now in ruins.

These aqueducts of solid masonry were a necessity to this people, for although they were not ignorant of the hydrostatic principle that water would rise to its own level they lacked the ability of making suitable pipes of the proper material to conduct these enormous quantities of water, for the use of cast iron was quite unknown.

We do not labor under this difficulty for we have at our command the means of manufacturing so admirably this much needed article, and we are in general spared the vast expense of the stone aqueduct, and can bring our water from where we will at our pleasure. But the rarity of these desirable conduits in modern times, in proportion to the number of cities which so greatly need them is marvelous. But neither are we niggards in this age of progress and prosperity. We hear of the great

system of waterworks which supplies Marseilles with the water of the Durance, by a canal sixty miles long, comprised of many tunnels through mountains and aqueducts across valleys, which is considered an extraordinary engineering feat of to-day. Most grand in design, solid in structure and of most extensive utility are the Ganges fresh water canal in Bengal, India; the Croton aqueduct with its magnificent bridge across the Harlem River; the famous and stupendous Manchester waterworks system, with a conduit ninety-six miles long; the Loch Katrine aqueduct, which brings to Glasgow the pure and potable waters of this beautiful and noted lake; and the well-known conduit by which the waters of the Vyrnwy are conveyed to Liverpool. On the Continent, we find that the City of Vienna obtains her water from the Styrian Alps, a distance of almost sixty miles; the water for Paris is brought about 110 miles to the reservoirs at Belleville when the waters of the Seine became too much polluted for domestic use.

Thus in ancient and in modern times vast sums of money have been expended and herculean tasks undertaken to give pure and wholesome water for domestic use. In our day a few large cities have done much for the sake of sanitation, but the tendency in this age of the aggregation of large bodies of people in cities, and the short-sighted and selfish policy of each community to pour its sewage into the most convenient stream or lake, regardless of the injury it may do others if only it flows away from its own door, calls urgently for the inauguration of some means to prevent the wholesale pollution of fresh waters, whether of springs, rivulets, lakes or rivers.

The authority of the City Health Board is practically

confined to the city's corporate limits; that of the township officers ends at the township line; that of the county officials at the county line; and the State Boards of Health can go no further than the State line; while the causes which produce the disease may come from without their jurisdiction. But the authority of a Secretary of Public Health of the United States would not only be coextensive with its boundaries, but wherever the American flag waves he could make his influence felt for the good of mankind. Therefore I repeat that a Department of Public Health is a public necessity, and the appointment of a Secretary of Public Health is demanded alike by the highest and by sordid motives.

That this official, if competent and clothed with adequate power, could save the country many millions of dollars annually is easily demonstrable. That he could prevent a vast amount of sickness and suffering and the unnecessary sacrifice of many thousands of lives during the first year—and in an increasing ratio during each succeeding year—of his incumbency is equally certain; and the government of the United States will not have attained its full stature—the culminating point of its influence for the highest benefit of all of its citizens, the zenith of its greatness—until a Bureau of Public Health is one of its integral and coequal departments.

Sanitary science should find a place in the management of every individual case of contagious or infectious diseases; therefore, the duty of a medical attendant on cases of typhoid fever is to see that all of the evacuations of every emunctory of the patient—the sputa, the urine, the vomit, as well as all the alvine dejections are disinfected as soon as

voided, nor should he await the development of pathognomonic symptoms of typhoid fever before attending to this important matter any more than before commencing the abortive treatment. The body and bed linen, especially if soiled by excrement, should receive scrupulous attention and should be put into some disinfecting solution,* or better in boiling water. These precautions are especially important in the country where there is the greatest danger of contaminating the water supply. Every practitioner, however, who does private practice will realize how easy it is to have these directions followed for two or three days, while the patient is not very ill, but how difficult—how impossible it is to have these sanitary precautions attended to for weeks, when those whose duty it is to care for the sick, as well as guard the health of the uninfected, are (as is too often the case) the immediate relations of the patient, who is perhaps passing dangerously near the brink of the grave, and all around are overwhelmed with anxiety; or perhaps one or two members of the family have passed to the great beyond, and in addition to the anxiety for the living is added grief for the dead. How much this labor of disinfection will be lightened, and rendered more efficient by the abortive treatment, only he who has passed through both experiences can tell. Antiseptic treatment in typhoid fever will prove to be of greater value to humanity, if possible, as a prophylactic than as a curative measure. It is much more than four

*There are on the market many manufactured or proprietory disinfectants, but there is nothing better than a simple solution of hydrargyrum chloridum corrosivum or ferrum sulphatum (corrisive sublimate or copperas), and these possess the advantages of being both convenient and inexpensive. Other good and efficacious disinfectants are zincum chloridum, acidum sulphurosum, and chlorinum.

times as difficult to have thorough sanitation for four weeks, than for one week. It is very much more difficult to have sanitary matters attended to when the patient is very sick, and every one anxious and perhaps overworked, than when the patient is but mildly ill, requiring no special care and causing no anxiety. No language can picture the difference between the results of the antiseptic and the "expectant method" of treating typhoid fever as shown in the condition of the patients. Still less can any pen indicate the advantage to humanity of the abortive treatment of the disease, arising from the shortened period of time during which the patient is a menace to the community, even though the hope should prove to be groundless, that by asepticizing the alimentary canal the alvine dejections are rendered innocuous. This point assumes higher importance from the conclusion of the Clinical Society of Great Britain, that "a person suffering from enteric fever is capable of conveying the infection to others throughout the whole course of the disease, from the date of the earliest symptoms of illness until convalescence has been established for at least a fortnight."

As typhoid fever is essentially a water borne disease it seems to follow that it is almost as frequently disseminated by the use of contaminated milk. Mr. Hart, writing in 1881, said: "The influence of milk in spreading zymotic diseases was then almost a new danger revealed by hygienic science. Ordinary measures of sanitary (domestic) precaution do not seem to avail to secure immunity against the incidence of diseases so spread, although the boiling of milk was seen to be a method of rendering that article innocuous."

The well-known property of milk of absorbing odors—

the fact that it is an excellent culture medium for disease germs, and that it has been known to be the prime factor in the spread of many epidemics of disease should, without farther teaching lead to its universal sterilization by heat. Milk has been responsible for so many outbreaks of typhoid fever in this country, that we instinctively inquire about the source from which the supply of that fluid is obtained as soon as we see a case of the disease. These outbreaks have all resulted from using polluted water with which to rinse the milk cans or adulterate the milk, with few exceptions—one heretofore mentioned as having occurred in a village near Leeds, England, during the summer of 1876 and reported by Dr. R. P. Oglesby ; and another occurring in Bayhead, New Jersey, during July 1894, reported by Dr. W. H. Katzenbach to the New York Clinical Society, October 1894, which included fifteen cases of the disease.

In this instance the first patient came from Whitesville, fifteen miles distant, to take charge of a herd of eight or ten cows, "which he stalled and pastured on a small farm, . . . and milked daily until July 11th, when, unable to be about any longer, he took to bed." From the facts offered it is fairly conclusive that the milk was not contaminated by the "water used in the cans for cleansing or dilution. The only way, consequently, in which the milk could have been infected was by Fred J——'s hands. How this could occur can be left to the imagination of those who are familiar with the personal habits of some who work on dairy farms."

Dr. Welphy, of Belfast, Ireland, has noted in his article, "Creameries and Infectious Diseases," an infected dairy was the cause of the certain outbreak of typhoid fever, and shows how minute a quantity of mor-

bific matter is capable of "well nigh indefinite multiplication in such an ideal culture medium as milk." He found in his examination that the cows in this dairy were milked by a person whose hands had been soiled by typhoid dejecta, and that some of the dairy maids acted also as nurses to the sick."

The bright, spicy and independent *Sanitary Era*, June, 1895, gives the following:

"In Stamford, Conn., the local health officer reports 337 cases (in a population of 16,000), of which 307 have been traced positively to the milk supplied by one dairyman, and thence to shallow wells near his barns, which furnished the water in which he rinsed his milk cans, and which water was foully contaminated from a little settlement of Italians close by. . . . The typhoid bacilli were found abundant both in the water and the milk of this dairy.

"In New Milford, Conn., twenty-three cases of typhoid fever have been traced to the milk from a herd of cows that were milked by a laborer suffering from the disease.

"The above epidemics are a continuation of the regular line, running back through those of Montclair, New Jersey, Springfield and Somerville, Mass., Waterbury, Conn., etc."

The knowledge that could be gained from an intimate association with some of those who milk and care for cows, might have a salutary effect upon some municipal law givers, though it might also destroy their appetite for this almost universal article of diet.

I fancy some members of the Roman syndic have visited some of Rome's out lying modern dairies, since—

"For some time past excellent regulations have been

in force in Rome proper, in relation to the health of milch cows and other animals which supply milk to the residents. By order of the syndic just issued similar regulations are put in force for the whole of the commune, which includes a considerable extent of the surrounding Campagna. They are to the following effect: All milch cows and other animals which supply milk in the suburbs and Agro Romano will be subject to a rigorous examination by the municipal veterinary surgeons. To this purpose, notice of every animal introduced into the commune must be given to the health authorities before the milk can be sold, and it is then placed under the inspection of the veterinary surgeon. When the animal is healthy and capable of furnishing good milk it will be marked in the horn, and a special license will be given to the owner."

Until some laws similar to the above are made and enforced in this country, and until we know who does the milking, it would be the part of wisdom to sterilize all milk used for domestic purposes, and especially for the sick room, and while treating typhoid fever it should not be used until perfectly sterilized by heat. The unpleasant flavor of boiled milk can be avoided if it is prepared in a closed vessel and immediately put into the refrigerator to be cooled. The addition of benzoic acid to milk cannot be too strongly condemned. It is fortunate for man that the earliest fermentative changes render milk acid before becoming putrescent, but the most of the chemical preservatives retard the acid fermentation without arresting putrefactive changes.

Every outbreak of typhoid fever which cannot be traced to the use of infected milk, may be assumed to depend upon water pollution—notwithstanding the

very able arguments of Dr. Priestly at the last meeting of the British Medical Association. Long before the true pathogeny of typhoid fever was even suspected careful observers had connected outbreaks of the disease with the water supply, and even as late as 1854, that great scientist, Pettenkofer, regarded the oscillations of the water in wells as in some mysterious way giving origin to the disease without realizing that its pathogenic influence is due to the pollution of the water with human excrement, and that variations in the level of the ground water merely gives opportunity for its contamination, which sometimes produces effects apparently out of all proportion to the cause; as at Winnefrede, West Virginia, where a single case of typhoid fever caused an outbreak of 154 cases in a community of 1,600 souls, by the pollution of a single spring and the stream flowing from it; or at Plymouth, Penn., where 1,200 cases were the result of the contamination of the water by the excrement of a single patient.

The drainage from cemeteries where victims of typhoid fever have been buried, have also been the probable cause of many outbreaks of the disease, as at Watertown, New York, where a large number of cases occurred during the summer of 1895. Professor Prestwick has pointed out that the growth of London was restricted till the establishment of a system supplying the inhabitants with an abundance of other than the *sparkling* water of old shallow wells which had been contaminated by infiltration of water from graveyards and elsewhere.

In my own practice, some of the most severe cases I have ever treated seemed to be the direct result of the pollution of well water by drainage from cemeteries. A

powerful argument in favor of cremation of bodies dead from contagious diseases, as well of sewage ; therefore, no water from any suspected source should be admitted into the sick room to be used as drink until it has been sterilized.

These simple precautions are all that are necessary to protect the community, the family and the nurses from the infection of typhoid fever, as well as to guard the patient from the danger of reinfection. There is no real danger of communication of typhoid fever from the patient directly to the nurse or to any one else.

The science of bacteriology has refuted the contagion theory of Bretonneau, Leuret, Gendron, and the host of observers who believed that the disease could be transmitted through the air and has confirmed the teachings of Budd that every case of typhoid fever is the child of some previous case—that the pathogenic principle is voided with the excrement of the patient, and that it is capable of such wide diffusion that all of the inhabitants of a populous city might be infected by the discharges from a single case of typhoid fever.

Murchison, in summing up the evidence of the contagiousness or noncontagiousness of typhoid fever, says : " But the most remarkable fact is what follows. Since 1861 it has been the practice to classify the patients in the fever hospital in this way. The typhus, relapsing, and scarlatina patients have been kept in distinct wards, whereas the patients suffering from enteric fever have been treated in the same wards with the many patients sent to the hospital, who have not been the subjects of any form of contagious fever. The two classes of patients have remained together, both during the acute stage of their maladies and in convalescence, in most instances for several weeks.

"The same night chairs have been used by both classes, and the employment of disinfectants has been exceptional. The result has been this: During the nine years 3,555 cases of enteric fever have been treated along with 5,144 patients not suffering from any specific fever; not one of the latter has contracted enteric fever. My experience, in fact, has led me to the conclusion that when enteric fever originates in the hospital as a rule there is something radically defective in the sanitary arrangements, and that either the air or drinking water is polluted with decomposing excrement."

TREATMENT.

The abortive treatment of typhoid fever is hedged around with many barriers and obstacles, which are all the more difficult to surmount because of the existing uncertainty as to its true pathogeny, but whether we assume that it is due to the presence in the system of the Eberth bacillus and its toxins, to a virulized bacillus coli cummunis or to some other noxious influence, the indications for treatment, though numerous, and in some respects obscure, are in others clear and well defined. To reinforce the natural power of the body to resist the encroachment of disease, to destroy and neutralize and eliminate as much as possible of the poison before it or its toxins have passed beyond their earliest usual habitat in man—the alimentary canal—and to reach into the general circulation and render innocuous the ptomaines, toxins, typho-toxin, tox-albumens or whatever interferes with the patient's health or comfort.

In early stages of uncomplicated typhoid fever in the adult, the patient should be regarded and treated simply as the container of the poisons, and when they are destroyed or neutralized and the container cleansed, nature will restore to each organ its normal function and all symptoms of the disease will disappear.

The treatment, to meet all of the indications, must be antiseptic, laxative, diuretic, and diaphoretic ; it must be more even than all this—it must have power to devitalize or render nontoxic all of the lethal or deleterious elements that have entered the system, whether circulating

in the blood or migrating through the various tissues and organs of the body. It must also be harmless to the healthy organism, and since a positive diagnosis of typhoid fever at a sufficiently early stage to abort the disease is sometimes impossible, it should be incapable of injuring the patient in any pathological condition that could be mistaken for that disease.

From the little we now know—and the much we imagine—of the cause and origin of typhoid fever, we may surmise that upon the invasion of the human system by the *materies morbi* of the disease, war is immediately inaugurated by the protective alexins, which is sometimes, no doubt, waged for days or even weeks with uncertain results, ending frequently in all probability in such easy and complete victory for the alexifers, that the patient in whom this internecine battle is fought is and remains totally oblivious of the great problems which are being solved within him—ending sometimes in a closer contest, but in ultimate victory—in this we recognize the "abortive attack,"—and again in a rout for the health restoring friend of man—this is the prolonged and often life destroying attack—and now while this conflict with one specific poison is in progress, the enemy may be reinforced by other kindred noxas or morbific influences from without, or even developed within the organism, for we have to do with a pathological as well as with a physiological and chemical laboratory—with a creator as well as a receiver of poisons—and here we have those dangerous complications and sequelæ so common in typhoid fever. To guard the patient against the dangers of these most frequent causes of a fatal termination of typhoid fever, constitute one of the most imperious demands for the early abortion of the disease.

It not infrequently occurs that an attack of typhoid fever which has run a mild course, suddenly assumes a malignant type, and may we not see here the defeat of the friendly alexins, the abuse of the victory of the pathogenic influences and an imperious call for the administration of alexipharmacons.

Since the principles that govern the abortive treatment of typhoid fever govern also the treatment of a large number of other microbic diseases, and if the exact formulas which have thus far proven most puissant for this purpose will not also cure all of the diseases that could be mistaken for it, they will at least put the patient in the best possible condition to recover from any pathological state at all resembling this disease. Hence it is not necessary to await in worse than idleness the development of such symptoms as would make an exact diagnosis possible.

As the so-called pathognomonic symptoms of this disease, with one doubtful exception, are evidence of already existent anatomical lesions, it becomes apparent that to await their supervention would be unwise. Thus the earlier the alexipharmics are exhibited the easier it will be to abort the disease, and the less will be the danger of relapses or grave complications.

This treatment to be invariably successful must be commenced in time to admit of resolution before necrosis of Peyer's glands takes place; therefore the first time a patient who is or who could become a victim of typhoid fever is seen, the antiseptic treatment should be instituted—the indisposition may be ever so insignificant, the symptoms far from characteristic—there may be but a trifling headache, a slight acceleration of the pulse and a scarcely perceptible elevation of the temperature. Upon such data one could not base a diagnosis of typhoid fever, but it would be

equally impossible to exclude it from the list of the maladies from which the patient may be suffering. Consequently, it is the physician's plain and imperative duty to give the patient the benefit of every doubt in a question of such vital importance to him; the more so because this antiseptic treatment is innocuous and uninjurious, and the patient need be put to no inconvenience or discommoded in any way—may in fact be allowed every liberty and latitude to the extent of following any ordinary avocation.

If convalescence follows the exhibition of a few doses of medicine no harm has been done, and the patient will be the better for having taken the antiseptic—but if characteristic symptoms of typhoid fever declare themselves, the physician will have conferred an inestimable blessing upon the patient by having begun the treatment early, and thus warded off all the danger of death and delivered him from the hazardous and disastrous ravages of the malady and the perils of its many complications and sequelæ.

But as it is not always possible to know just how severe the intestinal lesions may have become, every possible precaution and forethought must now be taken to guard against accident or injury to the inflamed abdominal viscera.

The nurse must be directed to exercise all devotion to her patient, and be vigilant and prudent and alert in the performance of every duty, and exact and attentive in the management of every detail, and withal cheerful and agreeable.

The sick room should be sunny and bright, well ventilated, clean in every sense of the word, and as free from draperies and superfluous furniture as possible. No remnants of food or drink or the dishes upon which either has been served should be left within it, and all soiled garments transferred to be disinfected and all excrementitious matter

removed as soon as voided, and subjected to the action of proper disinfectants.

The bed and bed linen should be perfectly clean and spotless, and changed as frequently as is consistent with the patient's rest and comfort. Care should be taken to replace immediately all articles that may become stained with excrementitious matters. The covering of the bed should be light, but (especially in late stages of the disease) sufficiently warm to meet every demand of comfort and protection to the invalid.

When put to bed the patient should be sponged and well rubbed with a course towel, and this should be repeated as often as necessary to keep the skin active and free from morbific materials. The body linen should be clean and stainless, and should be changed frequently. The nurse should endeavor to beguile away the time and soothe and reconcile her charge to his invalidism, humoring his fads and fancies when they do not interfere with his welfare, that his peace of mind and his serenity may aid in his rapid recovery, for by repining and bewailing, his nervous symptoms are aggravated and their alleviation delayed. She should guard the sick man from all unnecessary disturbances, the turmoil and agitation of the world should be kept from his ears, especially if nervous symptoms predominate, and except in case of emergency no other person should be allowed to remain for any length of time in the sick room, and low talking and whispering in his presence should be absolutely forbidden. It should be her duty to administer every portion of medicine, every particle of food and even every drop of water, only as and exactly as prescribed by the medical attendant. All medication and all nutriment should be given promptly and at proper intervals. No routinism should be permitted in regard to the bath. If

the patient is bathed at all it should be done in accordance with and at the time specified in the orders of physician.

A clinical record should be kept at the bedside of each patient which should show at a glance the following data: The name, age, sex and occupation of the patient, the day of the disease when first seen by the physician, the morning and evening temperature, the frequency and character of the pulse beats, the number and character of respirations per minute, the date of the institution of the treatment, the number and exact character of stools, the quantity and quality of urine voided, condition of the tongue, and any other important clinical features under the head of "remarks." The record should also show the kind, size and number of doses of medicine taken and the time at which they were administered, the quantity and sort of food and the intervals at which it was given, and even the quantity of water drank. For thus only can the physician see that all of his orders have been obeyed in the most minute detail. For the collection of scientific data the records should be more complete; *i. e.*, the date of the appearance and the character of all symptoms, as well as the date of their partial and total disappearance.

Unless the physician is ably and efficiently seconded by a thoroughly competent, thoroughly careful and intelligent nurse, his talents will be of minor importance, his efforts hampered and his success in aborting this hitherto refractory disease seriously imperiled. His records, too, (upon which the final adjudication of the question as to the power of antiseptic medicine over microbic diseases must rest) will be valueless for all scientific purposes.

As the curative treatment of typhoid fever depends quite as much upon the withholding of dangerous or deleterious medicines or such as interfere with either the admin-

istration or effect of the antiseptics or on the proper administration of the latter, it is fully as important a matter to point out and correct the errors of the "old method" of treatment as to promulgate the intrinsic merits of the new.

Much has been said and written by earlier authors about "treating dangerous symptoms" and especially about keeping the temperature down within "safe limits." Physicians of the present day are so prone to follow this unwise and irrational advice—a most reprehensible practice, at least in the first week or so of the disease in the adult—and the opinion that a high temperature is the chief source of peril is so general in the medical profession that it is necessary to warn its members against medicinal antipyretics. No doubt some of the advocates of the Brandt method of treating typhoid fever are responsible for this erroneous idea, since they, in accrediting the benefits resulting or supposed to result from the cold bath, place a reduction of the temperature first in importance, and make this symptom the indication for its repeated use.

The greatest therapeutic advantage to be derived from the bath is due to the increased elimination of the toxins and perhaps in a lesser degree to its stimulating effect and not to a lowering of the temperature—which may not be an unmixed blessing. A temperature of 105° or 106° F. prior to the softening or sloughing of any of the intestinal glands, in the adult, is not of itself fraught with extreme danger and is a danger signal only so far as it is indicative of the presence in the system of a conquering pathogenic influence. The truth of this proposition would seem to be established by the fact that a much higher temperature than is usually seen even in fatal cases of typhoid fever is not very uncommon in other ailments from which the patients recover with little exhaustion of the vital forces.

But three cases of typhoid fever with a temperature of 107° F. have ever come under my observation, while I have seen a patient recover from rheumatism without material loss of flesh or strength, whose temperature taken in the axilla registered 110° F.

Hence whatever we may think of the cooling effect of water—applied externally—there can be no question but the use of the cold bath and its apparently beneficial effects has (by inducing physicians to resort to all sorts of medicinal antipyretics) been the cause of much pernicious practice, through which many valuable lives have been sacrificed. Their use is not more defensible than is that of the corrosive poisons as microbecides and the physicians who will employ energetically the coal tar derivatives as antipyretics and corrosive sublimate as a germicide may kill more patients than could the most malignant epidemic of typhoid fever. Therefore give no corrosive or irritant poisons as a means of destroying the germ, and none of the coal tar products as antipyretics—they are never beneficial—they are always harmful—they are often perilous and sometimes will cause a fatal termination; when nature, unaided, might have exterminated the disease and not killed the patient.

Quinine should be administered in the treatment of typhoid fever only as a tonic and in very small doses late in the disease. The large doses sometimes administered to control the temperature are valueless for the purpose for which they are prescribed and are decidedly detrimental to the patient.

Alcohol, so largely used by many practitioners should have no place amongst the therapeutic agents applied to the curative treatment of this disease. Its use, if used at all, should be limited to such cases as have passed beyond

the power of abortive treatment, when toxæmia threatens the life of the patient—when the nervous symptoms become alarming or exhaustion is extreme, then it may possibly prove to be beneficial and should be poured with a lavish hand at least when used as a nervous sedative.

Diarrhœa.—This is another "symptom" which those who treat typhoid fever "symptomatically" usually make most heroic and unwise efforts to arrest. This is wrong—the diarrhœa is an expression of nature's objection to the presence in the system of obnoxious matter, and it is her method of getting rid of it; and to check it, would be to defeat one of her most laudable efforts. It would be wiser to encourage her by giving a simple laxative or cathartic—at least, give no opium or astringents. When the alimentary canal has been thoroughly asepticized the diarrhœa will cease.

Dr. Woodbridge, of Williams College, Massachusetts, a firm believer in the possibility of aborting typhoid fever, and an early advocate of the antiseptic treatment of the disease, says: "The advantage of an active laxative in the initial stage of the disease is too generally conceded to admit of doubt—an advantage shown on reduction of the number of the micro-organisms and in the reduction of temperature."

In every pathological condition from which diphtheria, pneumonia, meningitis, cholera-infantum, scarlatina, rubeola and typhoid fever cannot be excluded, antiseptics should be exhibited.

Every hour from the moment in which the poison is ingested until the patient is under the mystic spell of antiseptics is precious, therefore, every resource at the physician's command should be utilized for the purpose of asepticizing not only the alimentary canal, but also the whole

organism as thoroughly and as rapidly as possible, and as soon as the presence of the virus has become manifest. The graver the symptoms, the more heroic should be the treatment.

Assuming that an adult, not suffering from any concurrent affection is found on the ninth to the eleventh day of an attack of typhoid fever in the following condition: Temperature 105° F.; pulse 120; headache severe, insomnious; profuse bronchial catarrh; palpation reveals tenderness and gurgling in the right iliac fossa or possibly in the left, or even generally over the abdomen some tympanitic distention; no enlargement of the spleen; margins of the tongue red; the center coated, brown and dry; the mind wanders in delirium but the patient can be aroused; the characteristic rose spots are present; there is a history of epistaxis, as well as of chills or chilly sensations earlier in the disease. The bowels may be constipated or the patient may have an alarming diarrhœa, but there has as yet been no intestinal hæmorrhage. This patient is rapidly passing. if he has not already passed, beyond the reach of abortive treatment. Therefore let no time be lost. Be sure that every dose of medicine exhibited is properly prepared of pure and active drugs, properly administered at the proper time, and that every day of treatment has accomplished its just proportion of the cure. This patient should have been for some days confined to bed; he should be required to maintain at all times a recumbent position, and on no account allowed to rise even to evacuate the bladder, or to assist in raising his hips to permit the placing of the bedpan or draw-sheet. He should be sponged etc., and the instructions given to the nurse on a previous page should be rigidly enforced. The diet should consist exclusively of liquids of the most assimilable sort and such as leave

the least detritus, of which milk, peptonized, or not, should have the first place. Should tough curds be formed, it should be peptonized or mixed with a modicum of lime-water. If necessary the milk may be replaced in whole or in part by Fairchild Brothers & Foster's Panopeptin. Meat juices or broths, or egg albumen may be allowed. These foods should be continued to the exclusion of all solid or less digestible liquid articles of diet for at least ten days after the rectal or sublingual evening temperature has been normal, or in very severe cases for five or six days longer. Food should be given at regular intervals of not less than three hours, with a longer interval in the night, and as liberally as is consistent with complete digestion and assimilation.

TREATMENT.—Begin the medicinal treatment of this patient with formula No. 1.

℞. No. 1.

Podophyllin resin.....	$\frac{1}{960}$ gr.
Mercuous chloride, mild...	$\frac{1}{16}$ gr.
Guaiacol carbonate.....	$\frac{1}{16}$ gr.
Menthol.....	$\frac{1}{16}$ gr.
Eucalyptol.....	q. s.

Make one tablet.

Give one of these tablets every fifteen minutes during all of the wakeful portion of the first forty-eight hours. There will usually be little inclination to sleep during the first and second nights of treatment, so that from 80 to 100 or more tablets may be given. As it is essential to the success of the treatment that the medicine be distributed in minute portions over a considerable period of time, with no long breaks, the patient should be aroused if necessary often enough to take the required number of doses. Equally important is it that each and every dose of medicine administered should be washed down with large quantities

of distilled, sterilized, or if not contraindicated, some good laxative or diuretic mineral water.

The most useful potation for general purposes, because it is the most highly solvent, is distilled water, lightly charged with carbonic acid gas, preserved in tightly stoppered bottles. As it is slightly sparkling, if kept moderately cool, it proves to be a most agreeable beverage.

If vomiting be troublesome, a little menthol may be exhibited, or a sinapism may be placed over the epigastrium, but the tablets should be continued uninterruptedly, and will themselves usually arrest the emesis, and relieve the nausea.

At the end of twenty-four hours begin with formula No. 2, each tablet of which contains:

℞. No. 2. Podophyllum resin.....$\frac{1}{960}$ gr.
Mercurous chloride, mild. $\frac{1}{16}$ gr.
Guaiacol carbonate.....$\frac{1}{4}$ gr.
Menthol.....$\frac{1}{16}$ gr.
Thymol.....$\frac{1}{16}$ gr.
Eucalyptol.....q. s.

It will be noted that formulas Nos. 1 and 2 differ only in the addition of guaiacol carbonate 3-16 gr. and thymol 1-16 gr. to each tablet. So slight a difference might seem unnecessary, but experience has shown that some patients require so many tablets to produce the desired effect, that by taking ℞. No. 2 from the beginning of the treatment an unnecessary quantity of guaiacol carbonate and too much thymol would be administered, thus impairing the normal function of the stomach and possibly the integrity of the kidneys.

Give one tablet of this formula every fifteen minutes, together with the one or more tablets of formula No. 1,

until five or six free evacuations of the bowels have been procured during this and the following day. It sometimes happens that the tablets of formula No. 1 produce sufficient relaxation of the bowels during the first twenty-four hours, in which case they should be promptly discontinued and No. 2 administered with just the requisite frequency to secure the desired effect. Those who have had no experience with this treatment are shocked when advised to give medicine every fifteen minutes, both night and day, and seem to think it would be a fearful hardship to the patient to take it in this manner. The fact is, the patient with typhoid fever rarely sleeps during the first two nights of treatment, and if they do, they can easily be sufficiently aroused to swallow the tablet and a draught of water, without being fully awakened and will drop off to sleep again immediately. It is seldom that this frequent administration of medicine has to be continued longer than the second night.

If diarrhœa be a prominent symptom when the treatment is begun, and if it be not arrested by the antiseptic action of the tablets, the stools should be carefully watched for this effect, which will be manifested by the change in character and loss of offensive odor. Sometimes the cathartic effect of the medicine follows so closely upon its antiseptic action, that the diarrhœa of the disease runs imperceptibly into the purgative effect of the medicine, in which case the tablets must be continued but at longer intervals.

Not less than six free evacuations of the bowels having been secured during each of two successive periods of twenty-four hours, the dosage of formula No. 2 may be lightened, by giving the medicine less and less frequently each day, and thus allowing the alvine dejections to grad-

ually diminish to two or three evacuations at the end of the first week.

About the third or fourth day, or as soon as the medicine has produced sufficient elimination and all danger of emesis interfering with the treatment has passed, formula No. 3 should be administered, each capsule of which contains:

℞. No. 3. Thymol.....1 gr.
Guaiacol carbonate.....3 grs.
Menthol.....½ gr.
Eucalyptol.....5 m.

Give one of these capsules every three hours until the temperature has been normal at least three days.

About the fourth or fifth day, or as soon as the evacuations of the bowels have become sufficiently active and before any ill effects of the mercurial manifest themselves, discontinue the tablets and give of a saturated solution of chlorate of potash one teaspoonful every two or three hours until diminished activity of the bowels indicates the necessity of returning to the tablets No. 2, or if the stomach is irritable to No. 1.

The administration of formula No. 3 should not be allowed to interfere with the exhibition of formula No. 2, but if the bowels become too active the tablets should be discontinued for a day or two at a time, and No. 3 exhibited, returning to them as soon as possible. If, however, in cases of extreme costiveness, a very large quantity of the medicine has been necessary to secure the desired laxative condition, vigilance should be maintained for the slightest symptoms of ptyalism, and should they supervene, formula No. 3 and teaspoonful doses of a saturated solution of chlorate of potash should be given at three hours intervals, for two or three days if necessary.

It is sometimes advisable too to replace formula No. 2 with some mild saline cathartic, and in very constipated cases to substitute for the distilled water some gentle laxative mineral water.

The tendency to grave renal complications in typhoid fever is an attestation of the importance of using every possible precaution to protect the kidneys from all morbigenous influences, a purpose best conserved by diluting the urine and removing its irritating qualities. This is generally satisfactorily accomplished by the medicines already advised, but a mildly diuretic mineral water, in a certain class of cases, may be highly advantageous.

If the excretion of these organs is of very high specific gravity, a diuretic mixture such as the following should be given for a day or two, but it should be discontinued as soon as the urine is clear and bland.

℞. Potass acet.....ounces 2.
Spir. nitri. dulc.....ounces ½.
Aquæ dest.....q. s. ad. ounces 6.

S. Dose, a teaspoonful in a large draught of distilled water pro re nata.

After such management chemical analysis or the microscope, will rarely show albumen, or casts, or other evidences of any pathological condition of the kidneys.

The severity of the symptoms given in the hypothetical case of typhoid fever, emphasize the importance of guarding against these ordinary complications, indicate that the mesenteric glands were tumefied, that the spleen and liver were involved, and that necrosis and ulceration of Peyer's glands was imminent, if indeed, these conditions were not already present, and notwithstanding the rapid amelioration of all the symptoms, we have no means of knowing the exact state of the intestinal glands. Some of

these may be deeply ulcerated, and although we at once put them in the most perfect consonescent condition, we have yet to avoid the danger of intestinal hæmorrhage and perforation. The patient must therefore be confined to a state of complete rest and a liquid food, until all danger of these accidents—his only peril—has passed.

During this, the second week of the treatment, the temperature should be carefully watched and on the slightest elevation tablets of ℞. No. 2 should be administered as frequently and as boldly as at the beginning of the treatment, and under all circumstances the bowels should be kept free and active, moving once or twice each and every day, and the capsules should be continued until the patient is restored to perfect health.

This type of the disease was purposely chosen as it was on the very border line dividing the curable from the incurable stage of typhoid fever. It would be by far the most difficult variety to abort, and would be liable to all of the complications so general in this disease under symptomatic treatment. But for these reasons much of the caution as to diet and rest, and much of the advice as to the administration of medicine would be entirely superfluous. Had the same patient been put under efficacious treatment a few days or it may be a few hours earlier, there would have been no chance for any of the peculiar and annoying complications of this dire disease.

Complications involving the lungs are various in kind and degree, from the mild bronchial catarrh of the period of invasion, to the hypostatic congestion which is apt to be caused by the patient lying too long in one position, or by an enfeebled heart during the final stages of the disease, and to those cases beginning with a pneumonia which so completely dominates the scene at the outset of the attack,

that it not infrequently happens that no suspicion of the true character of the malady is awakened until the patient has passed beyond all human aid. There is no way to positively differentiate between true pneumonia and that pseudo-pneumonia resulting from an invasion of the air passages by the bacillus typhosis in the absence of characteristic symptoms of typhoid fever.

Therefore, there is but one safe therapeutic procedure in the incipient stage of pneumonia, viz., it should be treated as a case of typhoid fever. It will rarely be needful to resort to any other than these antiseptic medicaments, and then only such remedies should be given as are necessary to temporarily allay the cough, to make the patient more comfortable by relieving him of this irritating feature of the disease. Should it be proved that the Eberth bacillus is causing the mischief, and that the malady is only a variety of typhoid fever, the attack will be shortened, but the prospect of a rapid recovery would not be lessened by this treatment, even if true pneumonia be present.

In addition to the various stimulating or anodyne expectorants so valuable in certain pathological conditions of the air passages, one remedy, benzoyl-guaiacol, stands out as prominently useful in those cases in which the inflammation embraces the smaller ramifications of the bronchial tubes.

The frequently occurring catarrhal bronchitis, the cerebral symptoms, the paralysis, the chorea, the jaundice, and the muscular degeneration of the heart as shown by the enfeebled action of that organ, all being due to the presence in the system of the toxins of the disease, are most scientifically and satisfactorily treated by the antiseptic method already described for the original illness, and with the exception of minute doses of strychnia to strengthen the weakened heart, none of them need any other special medication.

One of the most troublesome symptoms—one too not wholly devoid of danger—is the venous thrombosis, usually affecting the veins of the lower extremities, and sometimes causing enormous swelling, generally of one, but sometimes of both legs, and extending from the toes to the hips, and even the body. This condition requires no special therapeutic management, it being safer to leave the swelling undisturbed for a time, rather than run the risk of detaching a portion of the thrombus and causing embolism of the pulmonary artery. Later this complication may be treated by hot fomentations, massage, and elevation of the member.

A physician engaged in a large consultation practice, especially if called long distances, will not infrequently see for the first time patients ill with typhoid fever, with all of the characteristic symptoms shown in the previous case, but in an aggravated form.

The patient has been ill fourteen to sixteen days or longer, his morning temperature is 104°, his evening temperature 105° or even higher. His pulse beats 130 times to the minute, is soft and sometimes dicrotic. He is delirious, picks at the bedclothes and at his own fingers. He evacuates his bowels and bladder involuntarily. His abdomen is covered with rose spots and is very tender, and there is also much tympanitic distention. He has for several days had slight hemoptysis, and has had one or perhaps more intestinal hæmorrhages. He has been treated "symptomatically" and "secundum artem," but unless the art be newly interpreted and a radical change in the treatment be inaugurated, the closing scene is not difficult to foresee, nor must we look far into the future to find it. What then is the consultant's first duty? To discontinue and abandon forever and at once the course of treatment which has brought the patient to his present precarious

state. To institute immediately efficacious antiseptic therapeutics. The treatment must be varied somewhat from that advised on a preceding page.

Begin with tablets of formula Nos. 1 and 2, giving a tablet of each every fifteen minutes until twelve tablets of each have been taken, then discontinue No. 1 and give No. 2 alone until the freer evacuations or the change in character of the stools and the loss of offensive odor show that some antiseptic effect has been obtained. They should now be continued at longer intervals and in varied periods according to the strength of the patient, who is already exhausted by the distressing and violent strain of the disease. Every precaution should be exerted to prevent farther lowering of the vital forces by excessive and debilitating diarrhœa, but the eliminative effect of the medicines should be obtained, and under no circumstances should any day be allowed to pass with less than two free evacuations of the bowels. A perfectly aseptic condition of the alimentary canal must be procured and maintained, but if very many tablets are administered, they should be discontinued for a day or two at a time, and a teaspoonful dose of a saturated solution of chlorate of potash exhibited at three hour intervals. Time is very precious just now, and as there is less fear of the interruption of the treatment by emesis, the capsules containing formula No. 3 should be commenced early in the treatment.

They should be given every three hours until improvement in the condition of the patient is manifested by a considerable amelioration in all symptoms, when the interval between the doses should be lengthened gradually, but they should be continued three times a day until the temperature remains normal.

The temperature, which prior to the eighth day of

the disease, was a symptom which gave little alarm, is now of the gravest consequence, and should be controlled by every legitimate means at the disposal of the physician in charge of the patient.

The nurse should be directed to sponge the patient two or three times each day, or oftener if necessary. In extreme pyrexia, from five to twenty-five, or in an emergency, thirty minims of guaiacol absolute should be applied to the abdomen, the entire surface of which should first be cleansed by using an alkaline wash (bicarbonate of soda). This remedy should be used with discretion, since its application has sometimes been followed by a sudden and alarming decline in temperature, and threatened collapse. An embrocation of spiritus terebinthinæ, aqua ammoniæ, oleum eucalyptus and guaiacol should be rubbed gently upon the abdomen, and over the most seriously involved thoracic region. The nurse should be instructed to watch carefully for the slightest symptom of threatening bed sores, and on the first appearance of redness of the skin over any prominent part of the body —especially of the hips—a piece of ordinary adhesive plaster, large enough to cover not only the reddened portion, but several inches around it should be applied at once. If this does not suffice, a ring cushion or a water bed may be called into requisition.

The flagging heart should be sustained with strychnine and possibly digitalis, though the latter is of doubtful utility and its use is not always devoid of danger. The cough and dyspnœa may sometimes be relieved with Dover's powder and the excessive diarrhœa controlled with opium and camphor. Quinine as a tonic may now prove to be useful, and here if ever, ammonia and alcoholic stimulants find their appropriate field.

The food should be made as nutritious and assimilable as possible ; milk should be peptonized ; meat juice, eggnog, and other easily digested foods may be added to the milk diet, and in failing digestion or in anorexia stimulating or nutritious enemata should be given.

Hopeless as seemed the condition of this patient when the antiseptic treatment was begun, he has survived without material retrogression the first forty-eight hours after the consultant was called, and has apparently made some progress toward recovery, but there are still the accidents of hæmorrhage and perforation to be dreaded. Every other cause of death has been done away with, and the danger to the patient from these calamities has been reduced to the minimum by emptying and cleansing the alimentary canal, thus rendering the intestinal wounds sanable and reducing the tympanitic distention.

From this point the treatment has been indicated, and all of the instructions previously given as to rest, etc., must be observed. It may be generally stated that every resource of nature, art and science that can directly or indirectly minister to the patient's comfort, arrest waste, add to the strength, or in any way aid in the conservation of the vital forces, should be mustered into active service. Had this patient been left under the inexcusable "symptomatic treatment" a few days or possibly but a few hours longer, the indications for treatment would have been the same, but the result would have been very different. Toxæmia and coma or profuse hæmorrhage or perforation and peritonitis would soon have closed the scene, or later exhaustion would have carried the patient beyond all human aid.

From this careful administration of every kind of medicine that can aid in the abortion of typhoid fever—in slowly re-

storing the patient to health or even alleviating his condition —in which is given every dose required even to the limit of his utmost necessity, taking the most painstaking precautions to avoid even the improbable accidents—from all this the scientific treatment of the disease varies through every gradation down to the administration of a few tablets of formula No. 1, in cases that present symptoms so unpronounced that no diagnosis whatever could be predicated upon them.

Had the treatment of the hypothetical case been commenced two or three days earlier the same medicine would have been administered, and in exactly the same manner, but a very much less quantity of it would have been given and it would have been discontinued very much sooner. The patient would not have been confined to bed so long and perhaps not at all. He would have been allowed to take such exercise as he desired, and if he felt well enough it would have been possible after the first week, and in many instances even during this period, for him to follow his usual avocation. He would have been permitted to eat solid food at all times, as soon as danger of necrosis of Peyer's glands could be excluded as a possible lesion. When his temperature had become normal, he would have been well in all that the term implies. His mind would have been clear and vigorous, his strength unimpaired. His appetite and digestion would have been in as good condition as before the attack. Every organ of the body would have been performing its proper functions in a normal manner and this too, with the loss of but a few days from his business or pleasure.

The warm advocacy of the "Brand method of treatment by cold bathing" in this country by Wilson, Osler and other professors of note, have raised the bath from its legitimate place which it held at the close of the last century, as an adjunct to the treatment—to a routine method of managing the disease. This method has become quite popular with some

physicians, and for it the most extravagant claims have been advanced by Brandt and others of his school. It is not believed that it shortens the duration of the disease, and the last report of the German Hospital of Philadelphia, for the year 1894, giving a death rate of $16\frac{2}{3}$ per cent (78 cases, with 13 deaths) is hardly calculated to encourage physicians to adopt a treatment which has been designated "brutal" by one of its most enthusiastic advocates. The *Medical News* of the 27th of July, 1895, page 109, says: "The German Hospital has been the home of the so-called cold water treatment in this country, and the beneficial results of the treatment in this institution in previous years have been largely quoted. The following table shows the number of cases of typhoid fever treated and the mortality from the year 1890, when the Brandt method was introduced:

YEAR.	NO. OF CASES TREATED.	DEATHS.	PER CENT.
1890	106	5	4.7
1891	116	8	6.9
1892	71	3	4.2
1893	74	11	14.8
1894	78	13	16.6

In the *Medical News* of November 26, 1892, Dr. J. C. Wilson reported one series of 160 cases treated according to the method of Brand with eight deaths, or 5 per cent; and another series of sixty-six cases with four deaths, or 6 per cent. (These cases are included in the figures already given, though differently arranged.) It would be interesting to determine what has caused this unfavorable increase in the mortality rate under the cold water treatment. As far as we can learn the methods have not been changed, and the disease in

Philadelphia has not been especially virulent. The death rate varies in different years. In the same hospital previous to 1890 the mortality varied from 11 to 20 per cent.

The Pennsylvania Hospital typhoid fever statistics are as follows:

YEAR.	NO. OF CASES TREATED.	DEATHS.	PER CENT.
1890	126	22	17.4
1891	144	23	16.0
1892	104	10	9.6
1893	94	4	4.2
1894	105	14	13.3

The Presbyterian Hospital reports show the following:

YEAR.	NO. OF CASES TREATED.	DEATHS.	PER CENT.
1890	17	5	28.8
1891	39	5	12.8
1892	83	6	7.0
1893	69	12	17.0
1894	80	3	3.7

In the Pennsylvania and the Presbyterian Hospitals the Brandt method has been used in the majority of the cases during the last two years. There is some danger of such a method of treatment becoming routine, to the exclusion of all other treatment, and this is always to be guarded against.

A death rate of 14.8 per cent in 1893 and 16⅔ per cent in 1894, so much higher than during the previous years, may not fairly represent the treatment but it certainly fails to fulfill the promises so lavishly made for this method."

TYPHOID FEVER IN CHILDREN.

The impressionable, partially developed nervous organism of the child—the great variety of diseases to which the nonimmune babe is susceptible*—the rapid metabolism of infantile life—all serve to render an exact diagnosis of typhoid fever in early stages of the malady in young children more difficult than in the adult.

The onset of the disease is usually more sudden and the nervous symptoms are far more prominent; vice versa, the intestinal lesions are milder, the inflammation of Peyer's glands takes place earlier, but more frequently ends in resolution. On the other hand, the inflammation invades a larger area, not being so well confined to Peyer's glands; but these glands increase in size in the same manner by hyperplasia, through proliferation of the lymphoid cells.

The tumefaction of the spleen is as constant and proportionally as great, and the symptom consequently possesses the same diagnostic value in the child as in the adult.

Tympanitis and tenderness in the right iliac region are symptoms of great importance, and have been present in a very large majority of my cases.

The gastrointestinal symptoms are sometimes lacking; the bowels, especially in early stages of the dis-

*Murchison reports eight cases in which the eruption of typhoid fever and that of scarlatina coexisted. Numerous observers have noted the coexistence of the former disease with rubeola and various other diseases of infantile as well as of adult life.

ease, being normal in condition or even constipated, while in other instances these symptoms are so pronounced that men of large experience have not infrequently diagnosticated typhoid fever as gastroenteritis and even as "acute indigestion."

Bronchial catarrh is almost as constant and as prominent as in rubeola, and often leads to fatal errors of diagnosis. So commonly is the cough connected with typhoid fever in children that its presence should always excite a suspicion as to the nature of the indisposition. Some observers have even proposed to include the symptom in the nomenclature of the disease. Professor Woodbridge, of Williams College, says: "A more or less severe bronchitis with not infrequent enlargement of the bronchial glands, is fast gaining deserved recognition as one of the most frequent lesions." Wilson says: "Slight bronchial catarrh can hardly be regarded as a complication, it is so much a part of the clinical history of the disease." Flint says: "A slight or moderate cough is almost invariably present." From Niemeyer I quote the following: "We find changes in the respiratory organs in all cases. The typhoid laryngeal ulcer is not infrequently found. There are always signs of an extensive catarrh, even in the smallest bronchi, marked by dark redness of the mucous membrane and scanty, tough secretions. The bronchial glands are swollen, vascular, and occasionally have a medullary appearance such as we shall describe for the mesenteric glands."

The foul odor of the breath and sordes often found on the lips and gums of the babe, with rhagades at a later period, are often the accompaniments of severe nervous symptoms.

The appearance of the tongue is one of the most characteristic symptoms of typhoid fever in infants, and although the coating may vary much in thickness and even in color, and may be moist, or dry and fissured, the clean red margin, and especially the red triangle at its tip are so typical of this malady as to amount to a practically pathognomonic symptom.

The babe and young child will plainly show by the movements of the head and hands that headache is present, and this symptom, usually prominent at the onset, is apt to increase as the malady progresses, and the babe will rotate its head from side to side and burrow it into the pillow, and finally well-marked opisthotonos may present itself. The eyes may become crossed or sightless, and deafness, total or partial, is not an uncommon occurrence; and the delirium and insomnia may be extreme. But grave as these symptoms are, it must be remembered that they result from no organic cerebral lesion, save in rare instances.

The pulse is always more frequent, and often found very much accelerated even when the other symptoms do not appear to be especially grave. Dicrotism is very rare.

Epistaxis is less constant in the child than in the adult.

Vomiting is frequently a troublesome symptom, and may be controlled by a sinapism placed over the epigastrium.

The chill at the onset of the disease is rare or rarely observed in children, but if accompanied by a rapid rise in temperature may be regarded as a serious symptom.

Hæmorrhage from the bowels during typhoid fever is rare in childhood.

Rose spots are usually an early but not a constant symptom in children.

A child will as a rule lose appetite from the very onset of the disease, and this is one of the earliest conditions which may indicate ill health.

The designation of "mild" or "severe" or "abortive" or "prolonged" or "malignant" attacks of typhoid fever in the adult or in the infant as "varieties of the disease" is certainly a misapplication of terms, due to a misapprehension of the etiology of the infection. There is and can be but one "variety" of typhoid fever (unless the invasion of the lung by the bacillus typhosis may come under this head) although a partial immunity on the part of the patient or the quantity of poison ingested, or perhaps other causes may influence the character of the attack.

As typhoid fever in children is produced by the same causes and is governed by the same laws, the general management of the disease should be the same as has been indicated already, modified, of course, by the age of the patient.

Should the child be so ill that it is necessary to confine it to one room, a selection should be made of one which is large, light and well ventilated, and all unnecessary articles of furniture removed; and the temperature of which should be kept at from 65° to 68°. It should be immaculately clean in all respects. Two beds are of importance, one for the child and one for the nurse. The bed covering should be soft and warm, the linen frequently changed, as well as the wearing apparel of the child, if in the slightest degree soiled, and properly disinfected in a solution of the chlorides or subjected to a high degree of heat. (Above 248° F.)

The nurse should be intelligent, and competent to take charge of the patient under all circumstances. Her personal habits should be unexceptionable, and her clothing of such material as can be consigned to the tub as occasions indicate.

The child should be given a sponge bath when required for cleanliness or for its soothing and refreshing influence. The bath should always be hot, indeed cold water (except as a drink) should have no place in the treatment of typhoid fever in children.

We were taught of old to guard against intestinal peristalsis, fearing that it would increase the danger of hæmorrhage and perforation, but now the more rational idea that all of the noxas and microbes and (if the disease have progressed so far) the bloodclots and pus and foul gases and all excrementitious matter should be eliminated, and that the first and most important step is to thoroughly asepticize the alimentary canal as one would an abscess, and by so doing rid it of the specific poison of the disease and all of the other morbid material and debris which may have been accumulated, and to do this by free catharsis and diuresis, thereby stimulating the circulation in the peripheral vessels of the intestines and overcoming the tendency to blood stasis.

All this can be effectually done in older children with the tablets and soft capsules which I have advised in another portion of this book, administered a little less frequently in proportion to the age of the child, but in such doses and at such intervals as to secure the results sought to be obtained in the treatment of adults.

In younger children my method of procedure is to begin the treatment with the following tablets, which are made soft and friable so that they may be easily crushed

or dissolved in a little milk, sweetened water or any agreeable vehicle or dropped into the mouth as a powder.

Formula No. 4.	
Each tablet contains	
Podophyllum resin, fine pwd	$\frac{1}{960}$ gr.
Murcurous chloride, mild	$\frac{1}{10}$ gr.
Guaiacol carbonate	$\frac{1}{8}$ gr.
Menthol	$\frac{1}{96}$ gr.
Eucalyptol	q. s.

Formula No. 5.	
Each capsule contains	
Guaiacol carbonate	½ gr.
Thymol	⅛ gr.
Menthol	$\frac{1}{10}$ gr.
Eucalyptol	1 minim
Olive oil	q. s.

I give to a child one year old, one, two, or three tablets, every hour or oftener. If the case present very severe symptoms the child will require larger doses.

Ordinarily it is not necessary to push the remedies as heroically as in adults nor is it advisable to produce such free catharsis. Four or five free evacuations of the bowels daily is the utmost limit to which the laxative effect should be carried in very young children and even this number should be procured for two or three days only. Capsules of formula No. 5 should always be given every three hours for a day or two after having given No. 4 for three or four days and every dose of every sort of medicine should be washed down with as liberal draughts of distilled water as the child can be induced to drink. These directions apply, whether the condition of the bowels be normal, constipated or alarmingly diarrhœic. If the latter condition prevails and the temperature is still high, the indications for the administration of antiseptics are all the more urgent and they should be exhibited promptly and nothing should be given that could in any way interfere with their action. As soon as sufficient laxative effect of the medication has been produced, or if the bowels were already diarrhœic, when the change in color or the absence of disagreeable

odor indicates that the antiseptic effect of the medicine has been obtained, smaller doses should be given at longer intervals until the condition has become normal.

Sometimes it is necessary to give carbonate of guaiacol more freely than could be done with Formula No. 4. In such instances this remedy may be given alone or combined with eucalyptol and menthol, or guaiacol absolute may replace the guaiacol carbonate.

If the temperature remain alarmingly high, despite the antiseptic treatment, the child may be sponged with hot or warm water and if necessary a few drops of guaiacol absolute and eucalyptol may be rubbed over the abdomen, carefully graduating the dose to such an amount as will reduce the temperature to from 101° to 102° F., but never lower than the former register. The effect of the application is apparent for several hours, the patient being more easily affected by the second embrocation which should be less in quantity than the first, but this repetition is rarely necessary.

I have never exceeded thirty drops of guaiacol and sixty drops of the eucalyptol as an external application on the adult and the dose for children should be rather smaller in proportion to age, although I have never seen any bad results following its use in either instance. The irritation of the skin is nil and the patient is not discommoded by its use. When the continued high temperature indicates the necessity for this application it should be used under the supervision of the medical attendant, as alarming depression is said to have been observed.

The object sought to be accomplished by the various steps in treatment are first to asepticize the alimentary canal and dislodge and eliminate the germs that are found within its walls to reduce to a minimum the quantity of poison in

the system by thoroughly flushing out the prima viæ; to destroy or neutralize the toxins of the disease; to sustain the vital and resisting powers of the patient; to excite the liver, kidneys and stomach to healthy action. These results will manifest themselves by the arrest of the diarrhœa, the relief of the delirium and the insomnia; and the abatement of the other nervous symptoms; the mind will become clear and remain so throughout the illness; all the abdominal tenderness and tympanites will disappear, the urine will become clear and lose all disagreeable odor; the tongue will become moist, and its coating begin to clear away; the appetite will return; the temperature will decline rapidly to nearly, if not quite normal; the pulse will increase in strength and diminish in frequency; the skin which may have had that typically, earthy pallor will take on a healthy color and tone; the respirations will become of normal frequency, and the bronchial catarrh will end in early resolution, and by the end of the first week or ten days of the treatment the patient will have lost all appearance of the typhoid state, and should begin to be quite cheerful and happy, having none of the fretfulness incident to the illness, and will be henceforth a very manageable invalid.

DIET.—As typhoid fever patients have a peculiar and distinctive patholysis, i. e. the inflammation and threatened ulceration of Peyer's glands and the small intestines—the toxic centers—a most important factor in the success of the treatment is the proper and scientific management of the dietetics.

Milk is the ideal food—mother's milk for the babe—goat or cow's milk for the older child and adult; it is easy of digestion, assimilable and the fat and sugar which it contains are well adapted to keep up the failing strength and supply the "waste of combustion" caused by the high fever. The

feeding of typhoid fever patients, if treated intelligently from the onset of the disease by the method I have advised is not of so much importance or consequence as if the pathological process be allowed to go on to necrosis and ulceration of the intestines. The proper feeding of infants in health or in disease is always a problem of much scientific interest. How often we find that children or adults, who seem to possess an antimilk idiosyncracy, can take it without discomfort and with benefit if rendered faintly alkaline by the addition of a little limewater or soda-bicarbonate or peptonized. It has been found too that milk of cows fed on beets and certain kinds of grass (notably the blue-grass of Kentucky) is slightly alkaline. It would be well therefore for the physician to ascertain that the milk that his patient is using is alkaline, and this is especially important in typhoid fever, in which the diet should always be liquids of the most assimilable sort and such as leave the least debris behind. The food in this malady should always be selected with a view of adding as much as possible to the total liquids taken into the system. In addition to milk, the diet may consist of toast water, an infusion of barley, or of rice, which is rich in starch of a very digestible form, and oatmeal, which contains a large proportion of fats. Meat juice and jellies, jelly made of iceland moss or of apple are sometimes very valuable and grateful additions to the dietary.

Egg albumen or the white of egg beaten with lemon juice and sugar, blancmange followed a little later by fish or shellfish and finally by roast beef and beefsteak, but these articles of diet must not be given indiscriminately. If the medical attendant could always be certain that he is aborting the disease without any serious intestinal lesion, the selection of the different kinds of food would indeed be a simple matter.

RELAPSES.

The relapse is as a rule much more abrupt than the first attack, that is, the temperature rises quickly and the pulse is sooner accelerated, the rose spots come early and after aborted attacks of the disease the relapse is more obstinate and generally of longer duration than the primary attack.

Relapses of typhoid fever should be treated as new attacks of the disease, and a little more energetically. As a relapse is a reinfection from within, it follows that its occurrence should be rare, because if the virus which caused the disease originally, has been destroyed there can be no resuscitation of it. However if the noxa has not been entirely neutralized and the patient remains under the observation of his medical attendant, any slight elevation of the temperature, the return of the rash or gastrointestinal, or other symptoms which signify the reawakening of the malady, can be seen at once, and should be regarded as an indication for a return to the antiseptic medication.

Of 110 cases of well-marked typhoid fever I have had three relapses which were severe and resisted abortive treatment more obstinately than the original attack of the disease. All of them might have been prevented by sufficient caution, but each of the patients had been walking about or driving long distances and two of them had passed from observation for several days.*

*Since the above was written two of my cases have relapsed.

Case No. 128. Alonzo O., residing in the adjoining county (Trumbull) whose brother had died a few days before from typhoid fever under the "expectant plan of treatment."

After making a diagnosis of typhoid fever, I told him to come to my office every day, which with two or three exceptions he did throughout both his primary attack and relapse.

The former was severe and ended in a subnormal temperature about the tenth day, which remained at or below normal for ten days when a relapse occurred with a longer high temperature (but in other respects not so severe) but rather more obstinate than the original illness. In this attack the temperature was below normal on the ninth day, went up to 100° on the thirteenth day and did not again touch normal till the sixteenth day. This rise in temperature took place during my absence in Detroit when the patient considered himself so far convalescent as not to require any more attention.

Case No. 129. Austie O. (wife of Case 128.)

This patient had been feeling miserably ill for ten days, but as her husband had not recovered from his illness she did not pay proper attention to herself, imagining that she had taken a very severe cold and the aches and pains were "just rheumatism." I saw her first in the early morning of the 30th of August, after a drive of three miles to my house (it was not yet eight o'clock) I found her temperature 104°. I told her to go home and to bed and that I would come out and see her that evening. She went home and washed all of the accumulated household and wearing apparel of the period of her husband's illness, which was not taken from the line till after dark of a cool late summer evening when the

dew and fog was so very disagreeable as to require a greatcoat for my drive to her home. I found her temperature 104.8° and pulse 140, and the attack promised to be very severe. From this it dropped to 100.4° on the morning of the 2d of September, at which time I gave her explicit directions in regard to the management of the medicines, directing her to call a physician if necessary and left to attend the meeting of the Mississippi Valley Medical Association at Detroit.

Returning on the 6th of the month, I found that she had neglected to take the medicine as directed; for she thought herself in no more need of especial attention than had been her husband, whom I had seen on the second or third day of his indisposition. Hence, instead of finding her on the fair road toward perfect health, I found that the temperature had gone up to 104.8°, and on the evening of the 9th of September (eleventh day of treatment, eighteenth day of disease) to 105.8°, pulse 112. I ordered a recumbent position to be maintained at all times, forbidding her to rise at stool. This order was not obeyed, for each time she insisted on rising; in fact, was very troublesome in this respect, which indiscretion resulted in a slight hæmorrhage on the evening of the 14th.

From this time she improved rapidly, the temperature being normal two days later, and remaining there (with the exception of one insignificant rise of less than a degree) till the 19th, when I saw her for the last time. She was directed to remain in bed for ten days, and the physician who was called during my absence in Chicago reported a normal temperature still on the 20th, at which time she felt well and hungry, and could not understand why she could not sit up and eat solid food as

her husband had done. She continued to improve until the 22d, when her temperature had gone up to 100° F., pulse, 100; which was the beginning of the relapse which terminated fatally under the care of another physician during my absence in Chicago, which I shall allow the doctor to describe in his own words.

During the latter part of the primary attack of typhoid fever of Case No. 129, Austie O., her sixteen months' old babe, Case No. 130, Roy O., had a very severe attack of the disease. The morning temperature the first time I saw him (the 14th of September) was 104.6° F., evening temperature 105° F.; and it went above this point sometime each day for the five following days, the highest temperature being 106° F. on the fifth day of the disease, after which time the patient rapidly recovered, being left in the care of another physician on the ninth day of the illness. Temperature 100° F., pulse 100, which went to normal on the seventeenth day of treatment.

The percentage of my cases of relapses (2.7 per cent) is lower than the lowest recorded per cent of the London Fever Hospital (3 per cent), and a very considerable improvement on that of the 229 cases treated by Osler in the Johns Hopkins Hospital (7.3 per cent), by the German observers, Leibermeister, in Basle, 8.6 per cent; Gerhardt, 6.3 per cent; Baumler, 11 per cent; Biermer, 3.3 per cent, and Hutchingson, 6.25 per cent.

A relapse in the child is rarely seen.

The rational inference would be that an aborted attack of typhoid fever would be more likely to be followed by relapses than one that had been allowed to run its ordinary course; but this is not so, if the small number of my cases which I have quoted constitute a reliable criterion.

Complications and Sequelæ—When typhoid fever is allowed to run an uninterrupted course for several weeks, its complications and sequelæ are so serious, so grave and so numerous, and withal are responsible for so large a percentage of deaths that physicians who have not had an unusually low death rate, sometimes say that they never lost an "uncomplicated case of typhoid fever"—and to outline the exact treatment of each, would require a much larger volume than the one I am writing. Such a dissertation would moreover be out of place in this work, since the whole burden of my argument is—that the patient is but the container of a specific poison which destroyed and eliminated leaves every organ free to resume its normal functions—hence dangerous complications and sequelæ should be rare indeed in properly managed cases of typhoid fever.

One Complication—perforation, demands especial attention; should this take place the object to be attained is to preclude the extravasation of the contents of the intestine into the peritoneal cavity. The indications are for the administration of morphine hypodermatically and perfect and absolute rest secured at once. In case of severe inflammation a poultice or ice should be applied over the abdomen. It will sometimes happen that a physician, quite capable of preventing necrosis and ulceration of Peyer's glands, had he treated his patient from the onset of the disease, will be called upon to assume the management of a case of typhoid fever at too late a stage to prevent the intestinal lesions; but in ample time to place the alimentary canal in a perfectly aseptic and as far as possible in a healthy condition before perforation occurs. Under these circumstances the aid of the surgeon should invariably be invoked, without loss of time, since without operative interference death is practically inevitable, and especially since the aseptic condition of the

bowel renders possible much better results from a surgical operation than have heretofore been obtained.

Dr. B. Merrill Ricketts, in the Cincinnati Lancet Clinic of April 6, 1895, in his paper on "Typhoid Ulcer; Perforation, operation, death," says:

"The enfeebled condition at the time when the operation is most likely to occur, is no doubt one of the greatest factors in allowing these cases to die without surgical relief. But now that drainage of the peritoneal cavity has been established in so many conditions we are led to believe that it may be successfully done, even when indicated in typhoid fever of any degree, for surely recovery cannot be expected without it in cases of perforation, or where the peritonitis is the result of the extension of typhoid inflammation. Now that we have the report of nineteen cases operated upon, with four recoveries, it seems that the operation is proven to be a rational one, and that the greatest step in advancing the treatment of this condition has been made. There does not seem to be any question as to the time to operate, so far as has yet been determined. The abdomen should be opened as soon after the perforation as possible, or as soon as peritonitis, with or without pus is discovered, whether or not the patient has rallied from the shock, for no time should be lost in washing out the abdominal cavity, and closing the perforation in any case that may be necessary. Attention should at once be given to the collapsed condition of the patient, the injection of warm salt water into the rectum, the irrigation of the abdomen with warm salt water or peroxide of hydrogen, the use of nitrate of strychnia, digitalis, nitro-glycerine, and, as Abbe suggests, "very warm saline infusion into the vein, of at least one pint."

"The reports of Van Hook and Abbe are as follows (Medical Record, page 2, January 5, 1895.)

1884. Mikulicz, four cases, one recovery, though unfortunately the diagnosis is doubtful.

1885. Lucke, one case, resection, death.

1886. Escher, one case, recovery, but the case is regarded by Louis as one of appendicitis.

1886. Greig Smith, one case, doubtful diagnosis, death.

1886. Bartlett, one case, death.

1887. Bonticue, one case, death.

1887. Morton, one case, death.

1889. Bonticue, one case, death.

1889. Senn, volvulus and perforation, one case, death.

1889. Hahn, two cases, death.

1890. Kimura, one case, death.

1890. Taylor, one case recovered.

1891. Van Hook, three cases, two dead, one recovered.

1894. Caley and Bland Sutton, one case, fatal.

1894. H. Allington, one case, fatal.

1894. Netschagaw, Medical News, December 1, 1894, page 609, one case, recovery.

1894. Abbe, one case recovery.

1894. Alezandroff, one case, death.

1894. Dandridge, one case, recovery.

1895. Ricketts, one case, death.

"It is not necessary that a perforation should be found to verify the diagnosis of typhoid fever, especially when the appendix is found intact, and all the symptoms have verified the diagnosis. I fully agree with Van Hook and Abbe that the diagnosis may be doubtful where the appendix is involved or cannot be found, but where the patient has been in competent hands and has had the usual symptoms of typhoid, and a sudden collapse occurs from the fifteenth to the thirtieth day, I see no reason why doubt should exist as to the propriety of operative interference."

This report does not offer much hope to the victims of perforation of the intestine and peritonitis. Fifteen deaths after nineteen operations (or, as is stated in a late issue of the *British Medical Journal*, twenty operations with one recovery) is a fearful percentage to face but the awful alternative makes the procedure a legitimate one and in view of the consanescent condition in which the ulcers are placed by antiseptic treatment, future reports may be expected to present much more favorable statistics ; albeit the occasion for the operation will become more and more rare, as physicians learn to secure adequate results from general and intestinal antiseptics.

Abdominal section and ligation of the bleeding artery has been advised in alarming intestinal hæmorrhage, but this is an operation which, (when the hæmorrhage has become copious enough to justify the procedure), must be performed under most inauspicious conditions, therefore cautious and wise physicians will prefer to treat the patient through this accident by the application of ice to the abdomen and the administration of ergot to arrest the hæmorrhage, and strychnia and stimulants to sustain the heart's action and the strength of the patient during the period of depression, to the hazard of such desperate surgery.

Another complication has recently come under my observation, in which a celiotomy might have saved the life of the patient had it been possible to make an exact diagnosis in time to operate successfully. This allusion is to the case of James K, (reported on page 152) in whom all ordinary dangers of long continued illness or a fatal termination from typhoid fever had been averted, as was evidenced by the disappearance of all of the unpropitious symptoms—the tympanites, the pain and tenderness of the abdomen, the delirium ; by the tongue becoming moist and clean ; by

the rapidity of the decline of temperature; by the return of the appetite; by the cheerful and happy state of the mind; and anatomically and most conclusively, by the healthy granulating condition of the ulcers of the ileum. (See colored plate No. 1, page 152). There is a marked contrast to be seen in the appearance of these lesions as compared with those which are represented on the colored plate No. 2, (page 154). This illustration shows a section of the lower portion of the ileum of a patient in whom a post-mortem had been made at the Cook County Hospital, Chicago. The patient died very soon after having been admitted to the ward of the Hospital and nothing was known as to the previous treatment of the case, but such information as I have at my disposal was courteously furnished me by Dr. Oliver N. Huff, of Chicago, who also very kindly arranged to have the specimens photographed, that they might be placed here to show the phœgedenic and gangrenous ulcers in contrast to the beautifully healing ulcers exbibited in plate No 1. Had a celiotomy been performed and the invagination (shown on colored plate No. 3, page 159) been unsheathed, it might have saved the life of the patient.

Pregnancy.—Complicating typhoid fever, should be referred to, not as indicating or demanding any special treatment, but as requiring an early and careful application of antiseptic medicine, the beneficial effects of which are made manifest by the reports of all of the physicians who mention the subject. These gentlemen report more than 50 per cent of their patients as having recovered and eventually giving birth to healthy children at full term, whereas a very general summing up of the data of those cases which have been treated by other methods, indicate that an average of not less than seventy out of every hundred women have miscarriages, and an abnormally large

per cent die. It should be observed therefore, that neither the coexistence of pregnancy nor Bright's disease with typhoid fever, contraindicates the use of antiseptic medicine; nor do I know of any other complication or pathological condition which does so.

Pregnant women should receive the most scrupulous care and attention from both physician and nurse; the medicine should be given at regular intervals and care should be taken to confine its laxative effect within due bounds. These patients should be kept as nearly as possible in a state of absolute rest and their diet should be restricted to the most easily assimilated articles of liquid food, preferably milk which should be taken in sips and, if necessary, peptonized.

Pneumo-Typhus.—One of the most perilous complications of typhoid fever—it probably very rarely continues more than a day or so as a true pneumo-typhus, dependent upon the invasion of the lung by the bacillus typhosis only. The pathogenic microbe of typhoid fever is early reinforced by other microörganisms, most frequently, perhaps, by the micrococcus pneumoniæ crouposæ. The imminence of the invasion of the lung by these marplots emphasizes the importance of treating this complication antiseptically, early and heroically.

The nervous complications of typhoid fever are supposed to be caused by the absorption of the toxins of the disease into the system—toxæmia—but the well-known fact that the microörganisms have been found in all parts of the body, coupled with the suspicion that they may excite inflammations and abscesses, would apparently justify the conclusion that the so-called neuroses of typhoid fever are sometimes due to the migration of bacteria to the brain, sometimes to meningitis

caused by their presence and sometimes to hemostasis, or blood clot, and pressure. Sometimes the onset of illness is so sudden as to make the symptoms closely simulate those of cerebro-spinal meningitis, and instances are known in which patients have been stricken down and have died within forty-eight hours of the inception of the disease, without having regained consciousness; hence in those attacks of typhoid fever in which the nervous element predominates, as well as in those involving the lung, the patient should be more energetically treated than I have recommended in typical attacks of the disease. Instead of giving one tablet of Formula No. 1, it is advisable that two or three tablets of No. 1 and one or two of No. 2 should be administered every fifteen minutes until their effects are perceptible, and instead of waiting until the third or fourth day to begin capsules of Formula No. 3, they should be given at once (or as soon as the danger of causing nausea or vomiting is averted) and continued at two or three hour intervals, until some abatement of the alarming symptoms has been observed, after which the patient should be treated according to the directions which have been given on a previous page for an uncomplicated case of typhoid fever.

Closely allied to the complications of the nervous system and which are due, no doubt, in some measure, at least, to the same cause, are those which involve the eye and ear. Choroiditis, irido-cyclitis, congestion and inflammation of the conjunctivæ, opacity of the cornea, the not infrequent supervention of cataract and other anomalies of vision, should constitute a sufficient warning to the physician to take especial care of the eyes of his patients during attacks of typhoid fever.

Abscesses occasionally make their appearance during an attack of typhoid fever and they should always be freely opened. Tumefied and inflamed parotid glands especially, should be deeply incised, even though no fluctuation can be detected and though no pus be escaping by Steno's duct. The operation is almost invariably followed by diminished tumefaction and a lowered temperature, as well as by a general improvement in the condition of the patient.

CONCLUSION.

To the medical profession is committed the Abortive Treatment of Typhoid Fever and with it Antiseptic Medicine—the most important subjects which this, the most learned of the professions, will ever be called upon to investigate and adjudicate.

Prof. Da Costa said in one of his lectures "typhoid fever is *the* fever of this country; yes, it is *the* fever of the whole world."

"Of this life destroyer," Sir William Jenner said "I have never known a case of typhoid fever to be cut short by any remedial agent—that is, cured. The poison which causes any of the acute specific diseases (to which typhoid fever, as much as smallpox, belongs) having entered the system, all of the stages of the disease must, so far as we know, be passed through, before the patient can be well. The ordinary duration of a fully developed attack of typhoid fever is from twenty-eight to thirty days."

These expressions of opinion were written in 1893, after more than half a century of special investigation of the subject in the best school for its practical study in

the world—the Fever Hospitals of London—and his words are entitled to every possible consideration, especially as he voices the sentiment of his coadjutors on this side of the ocean, and they might well cause the boldest observer to hesitate on the eve of sending out to his profession, a book which promulgates theories which are in such direct conflict with those that are universally taught, that its teachings must subvert those in conflict with it or consign its author to dishonor or oblivion, but I am writing from knowledge which is grounded on twenty years of personal experience supplemented by the reports of a large number of cases of typhoid fever, which have been aborted by this special method of treatment, and which were kindly sent me by an enormous number of physicians to support my assumptions, and the analysis and synthesis of these constitute irrefragable proof that my postulate is an established fact and they should remove the whole subject from the sea of speculation and theory, to the solid foundation of applied science.

For this disease, at least, antiseptic medicine has passed out of the field of experimental study and it will, in the hands of those who understand its use and value, and who wisely select and dexterously exhibit the remedies which are to be applied, be found to be as potent for the cure of typhoid fever as are the antiperiodics for malaria.

The full import of this statement will become apparent as soon as the symptomology of the prodromic stage of the disease has been amplified, and its apodeixis will come quickly if the promise of the possibility of an early bacteriological diagnosis made by the results of Elsner's experiments, should be sustained by the touch-

stone of practical experience, or if some other pathognomonic symptom of the incubating disease should be discovered, by means of which a direct diagnosis in its inchoative period could be established, then the world will recognize the truth of my oft repeated declaration that typhoid fever can be aborted and death from the diseases always averted.

INDEX.

Abbe, Report on Perforation..... 331
Abdomen, Condition of..... 256
Guaiacol applied to..... 311
Irrigation of the..... 330
Condition in Perforation..... 330
Abdominal Affection, Southwood Smith (1830)..... 15
Abdominal Fever, Flint (1852) American Writers..... 15
Abdominal Pain, (Hutchinson on 12)..... 233
Abdomimal Tenderness, Murchison on..... 11
Abdominal Section, ... 332
Abdominal Typhus Autenreith, (1822)..... 15
Abdominal Viscera..... 295
Abercrombie (1820) Entero-mesenteric Fever..... 18
Aborted Typhoid Fever..... .....207, 209, 213, 214
Abortive Attack..... 293
Abortive Treatment.....114, 129
Remedies for..... 132
Harmlessness of..... 133
Should be instituted early.... 76
Averted all deaths for fourteen years.....179, 203
Advantages of, to humanity... 285
Importance of early diagnosis in..... 131
Endorsements of 48, 122, 127, 144, 145, 146, 147, 161, 162, 163, 164, 165, 166, 167, 168, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202
Abortive Type of Typhoid..... 209
Acetic Acid..... 247
Acid, Carbonic..... 303
Picric..... 247
Acid, Sulphanilic..... 235
Acidum, Sulphurosum..... 284
Acid, Hydrochloric..... 235
Acute Indigestion, differential diagnosis of..... 317
Acute Mania, differential diagnosis of..... 254
Acute Phthisis pulmonalis, differential diagnosis of.....252, 317
Adhesive Plaster 311
Age, influence of.....23, 24
Osler on..... 24
Agminated glands, Harley on...13, 14
Ague, Quotidian, Amœba of..... 244
Tertian, Amœba of..... 244
Quartan, Amœba of..... 244
Air Passages, Bacillus Typhosis in. 308
Albert, Prince, Report on Death of 259
Albumen in Urine 306
Alcohol in Abortive Treatment.... 299
in Late Stages..... 311
in Chezynsky's Formula for Dye..... 245
Ammoniated..... 248
Absolute 245, 248
Hydrochloric Acid..... 248
Methylated..... 245
as a Nervous Sedative..... 300
Alexandroff, On Operation in Perforation..... 331
Alexifers 293
Alexins, Protective 219, 293
Alexipharmacons 294
Alison, (1844), Enteritis Erysipelatosa, Fever with Affection of Abdomen..... 17
Alkaline Milk..... 324
Alkaline Stools 234
Alkaline Wash..... 311
Alkaline Solution 235

Alleghany, Reports of Typhoid Fever in..... 278
Allington, H., On Operation in Perforation 331
Alimentary Canal, Habitat of Bacillus Typhosis.....40, 42
Alvine Dejections, Microscopical Study of.....223, 234
Leeuwenhoeck on..... 223
Disinfection of. 283, 285
Alum Hæmatoxylin..... 248
American Medical Association, Journal of, Editorial in 29
Quotation from Article on "Typhoid Fever in Children." 135
Meeting in Milwaukee.....29, 43
Meeting in Washington 39
Meeting in San Francisco..71, 103
Meeting in Baltimore.....133, 178
America, Importance of Antiseptic Medicine to..... 65
Amœba of Malaria..... 243
Ammonia.....235, 311
Salycil..... 196
Amsterdam, Death Rate in..... 278
Analine Dyes..... 245
Anatomical Lesions..... 14
Plate of.....152, 154, 333
Date of Appearance of..... 237
Andral, (1823), Fievre Continue... 16
Anodyne Expectorants..... 308
Anorexia, (Harley on, 13) 256, 312
Anti-milk Idiosyncrasy..... 324
Antiperiodics in Malaria..... 337
Antipyretics, Medicinal, Condemnation of..... 299
Antiseptic Medicine.....53, 60
No Death During Antiseptic Treatment 113
All Physicians will Use..... 114
Many Types Yield to..... 130
Has a Reserve Power for Good 179
Value in Early Stages..... 181
Application of, to the Cure of Microbic Diseases. 210, 218
Usefulness of..... 214
Antiseptic Medicine, Condition of patient after..... 217
Lower Death Rate After..... 218
Resistance of Typhoid to..... 219
As a Prophylactic..... 284
As a Neutralizer and Eliminative 292
Professor L. D. Woodbridge, an Early Advocate of..... 300
Directions for the Administraiton of..... 302
Cathartic and Antiseptic Action of..... 304
Usefulness in Renal Complications..... 306
Treatment of Pneumonia with 308
Various Complications Treated with..... 308
Administration in Late Stages. 310
Administration to the Child... 320
Relapses Treated Energetically 325
Apparatus for Microscopical Work 245
Appetite in Children..... 319
Appius Claudius..... 280
Apyrexia..... 230
Aqua Ammonia..... 311
Aqueducts..... 281
Croton..... 282
Armstrong (1816), Common Continued Fever..... 16
Artery, Pulmonary..... 309
Bleeding, Ligation of..... 332
Ashpits..... 268
Athens, Water Supply of..... 280
Atypical Typhoid, Differential Diagnosis of..... 254
Autenreith (1822), Abdominal Typhus..... 15
Autopsy, After Error in Diagnosis. 136
in Dr. Cunningham's Case.... 154
in Dr. Dodge's Case 183
Osler on..... 75
Babbington (1853), Febris Tympanica, ... 18
Bacillus Coli Communis, first described by Escherish..... 224

Bacillus Coli Communis, Pathognomonic Signs of..... 225
Virulized, as a cause of Typhoid 292
Bacillus Tuberculosis, Microscopical examination of the sputa for 252
Bacillus Typhosis, Typhoid Fever due to..... 14
Discovery of the, by Eberth and Koch.....84, 224
As a Cause of Typhoid Fever 224
Same as the Bacillus Coli Communis, virulized..... 225
in the Urine..... 235
Pathological changes called Typhoid Fever, primarily due to..... 241
Presence in the System of.... 292
Invasion of the Air Passages by the..... 308
Invasion of the Lung by the.. 319
Bacteria 92
Destruction of. 219
Ptomaines of..... 92
Bacteriology, Wonderful Discoveries in..... 14, 64
Knowledge of, too new..... 91
Giant Strides in the Science of 223
in Microbic fields..... 224
Indebtedness to..... 225
in Diagnosis..... 241
Bacteriological Demonstration.... 269
Baglivi (1696), Febris Mesenterica Maligna..... 17
Ballonius (1680), Febris Gastrica,..... 17
Balmer, Dr. Report of cases, from letter..... 190
Balsam, Canada..... 248
Baltimore, Meeting of American Medical Association at..133, 178
Health Reports of..... 275
Death Reports of..... 275
Papers Read at, in the Section on Diseases of Children, May, 1895..... 133
Baltimore, in The Section on Practice, May, 1895..... 178
Barley, Infusion of..... 324
Barnes, Dr., Verification of Diagnosis..... 63
Bartlett, (1842), Typhoid Fever... 15
on Operation in Perforation 331
Bath, American Medical Journal on 30, 35
in Children, when Temperature remains high..... 95
Advocates of..... 104
No Routinism in..... 296
in Children 320
Brand Method of..... 298
Advocacy of Wilson, Osler, etc., of..... 313
Baumler, On Percentage of Relapses..... 328
Bay Head, New Jersey, Epidemic of Typhoid Fever at.....28, 286
Bed Sores..... 257
Treatment of..... 311
Beef Steak..... 324
Beets, Cows Fed on..... 324
Belfast, Ireland, Epidemic of Typhoid Fever at..... 286
Benelli (1775), Febbre Biliosa.... 17
Bengal, India, Water Supply of... 282
Bennett, Dr., Report of Cases. 126, 194
Benzoic Acid..... 288
Benzoyl Guaiacol..... 308
Berlin, Death Rate in..... 278
Bertlotte, Dr..... 53
Bicarbonate of Soda..... 311
in Milk..... 324
Biermer on Percentage of Relapses. 328
Bignami, Laveran's Discovery, Verified by. 242
"The Parasites of Malarial Fevers," by..... 243
Bilio-Gastric Fever, Copland (1844) 17
Bilious Attack..... 241
Differential Diagnosis of..... 254

Bilious Continued Fever, Modern Writers..... 17
Bilious Fever, Pringle (1750), Rutty (1770)..... 17
Bladder, Recumbent Position to Evacuate the..... 301
Blanc Mange..... 324
Blaxal, Dr., Report of Case..... 27
Bleeding Artery, Ligation of..... 332
Blood, Microscopical Examination of..... 223
Blue Grass, Cows Fed on..... 324
Body and Bed Linen, Disinfection of..... 284
Clean and Spotless..... 296
Warm and Light.....296, 319
Bonticue, On Operation in Perforation..... 331
Boston, Death Rate in..... 279
Bouchard, Professor, On Abortion of Typhoid Fever..... 206
Boudet, On Hæmorrhage..... 236
Bowels, Condition of, by Boudet.. 236
In Early Stages. 316
Brain Fever, Osler on..... 75
Differential Diagnosis of..142, 148
Brand Method 298
Of Reducing the Temperature 298
Advocated by Osler, Wilson, etc..... 313
Cases Reported Treated by, in German Hospital, Philadelphia, Penn 314
Breslau, Death Rate in..... 278
Bretonneau (1826) Dothien Enterite..... 18
Brewer, Dr. J. J., Cases of Typhoid Fever Treated by.... 190
Brieger, On Isolation of Typhotoxin 224
Bright's Disease..... 130
Complicated with Typhoid Fever..... 334
Bright, (1829) Fever with Ulceration of the Intestines..... 18
British Medical Association..... 289
British Medical Journal, "Water-Borne Typhoid," Reports on 24, 25
On Importance of Pure Water 266
Bromidia 187
Bronchial Catarrh, and Hypostatic Congestion..... 307
Professor Woodbridge on..... 317
Bronchial Tubes, Affection of.... 308
Bronchitis, Catarrhal..... 308
Wyeth's, Tablets..... 89
Wilson on..... 317
Flint on..... 317
Niemeyer on..... 317
Broussais (1816), Gastro-enterite.. 18
Brown, (1853), Night Soil Fever... 18
Brown, Dr., Illness of the Prince Consort..... 268
Brussels, Death Rate in..... 278
Browitz, Microscopical Work of.. 224
Burchard, Febris, Mesenterica Acuta 17
Buccal Cavity, Microscopical Study of 223
Buda-Pesth, Death Rate in..... 278
Budd, W. (1856), Intestinal Fever, Theory of..... 18
Buffalo Medical Club, Paper Read at 80
Reference to Discussion in ... 107
Burt, Dr. C. I., Report of Cases... 197

Caley, on Operation in Perforation 331
Calomel..... .....65, 191
Condemnation of, by Harley.. 211
Camphor and Opium, Diarrhœa Controlled by 311
"Can Typhoid Fever be Aborted?" Paper read, M. V. M. A., Oct. 1893 29
Paper read, Mahoning Co., Jan. 1894..... 54
Paper read, Mahoning County Medical Society, Feb'y, 1894 63
Paper read, Ohio State Medical Society, May, 1895 149

Canada, Health Department of.... 41
Canada Balsam..... 248
Canadians, Importance of Abortive Treatment to..... 65
Canton, Ohio, Letter from..... 166
Capsules, Formula No. 3..... 305
Formula No. 5..... 321
Carbonic Acid Gas..... 303
Cardiac Pathology..... 262
Casts, in Urine..... 306
Castor Oil..... 191
Catarrh, Bronchial, Antiseptic Medicine, Best Initial Treatment for..... 307
Von Geitl on..... 13
Catharsis, Free, Dr. Dodge on.... 183
Cathartics, in Diarrhœa..... 300
Mild Saline..... 306
Condemnation of 210
Causes of Typhoid Fever, Predisposing..... 23
Age..... 23
Poisonous Effluvia 25
Human Excrement..... 25
Open Sewers..... 25
Exciting, Bacillus Typhosis... 25
Previous Attacks, Causing Immunity 25
Cæcum, Glands of..... 14
Cell Development..... 223
Metamorphosis..... 223
Celli, on Malaria..... 242
Celiotomy 332
Cemeteries, Drainage from, Prof. Prestwick on..... 289
Cerebro Spinal Meningitis, Osler on 75
Differential Diagnosis of..137, 254
Inaccurate Diagnosis of..... 148
Treated with the Sulphites.... 210
Antiseptic Treatment of.300, 308
Cesspool Fever, Various Writers.. 18
Cesspools, Illconstructed..... 268
Chairman of the Ways and Means Committee, Illness of..... 261
Chalandri, Ancient Airshafts to Aqueducts, at..... 280
Chamber of Commerce..... 160
Chemical Analysis..... 306
Cheyne (1833), Epidemic Gastric Fever..... 17
Chezynsky, Formula for Dyes.... 245
Children, Typhoid Fever in..... 23
"Children, Typhoid Fever in," Paper on, read before A. M. A., at Baltimore, May, 1895. 133
Murchison on..... 134
No Mention of, in Reynolds' "System of Medicine"... 134
Pepper on..... 134
Osler on..... 134
Predominance of Nervous Symptoms in. 135
Quotation from A. M. A. Journal on..... 135
Post-mortems in..... 135
Reports of Cases. ...136, 138, 139
Differential Diagnosis in 136, 137, 148
Limited Number of Cases Reported as..... 137
Last Two Fatal Cases in 139
Dr. McWilliams' Case..... 145
Dr. Cunningham's Case..... 145
Dr. Udell's Cases..... 146
Results Predicted for Antiseptic Treatment in..... 147
Treatment in.....316, 320, 321
Symptoms in..... 316
Cough Connected with..... 317
Dicrotism of Pulse Rare in... 318
Chill Rarely Observed in. ... 318
Hemorrhage Rare in..... 318
Management of..... 319
Tablets of Formula No. 4 for. 321
Capsules of Formula No. 5 for 321
Carbonate of Guaiacol for ... 322
Guaiacol and Eucalyptol Applied to Abdomen in..... 322
Milk, Cow's and Goat's for....
Chilliness, Murchison on..... 11
Hutchinson on..... 12

Chlorate of Potash, Saturated Solution of.....305, 310
Chlorinum..... 284
Cholera, Differential Diagnosis of. 101
Cholera Infantum, Mistaken Diagnosis of..... 137
Treated as Typhoid Fever.... 148
Chomel (1834), Fièvre Typhoide... 15
Chorea..... 308
Choroid, Tubercle of..... 252
Christiana, Death Rate in..... 278
Christison (1840), Dothiénentérite 16
Chritzman, Dr. H. G., Report of Cases from Letter..... 188
Cincinnati Lancet Clinic, Report of Death Rate in Foreign Cities, from..... 277
Report of Ricketts on Typhoid Ulcer, from..... 330
Cincinnati, Death Rate of..... 279
Clark, Alonzo..... 255
Clark, Sir James, on Illness of the Prince Consort.....260, 261
Cleanliness.....267, 269
Cleveland, Microscopical Work in. 223
Cleveland Medical Society..... 157
Clinical Record, Importance of... 297
Clinical Society of Great Britain, Conclusions of..... 26
Report on Infectiousness of Typhoid Fever..... 285
Lectures..... 220
Coal Tar Derivatives.....104, 120
Condemnation of..... 67
Dr. Shields on..... 197
Heart Failure From..... 240
As Antipyretics..... 299
Collamore, Dr. Remarks at Columbus..... 107
Collapse..... 319
College of Physicians of London, England, (1869) Enteric Fever..... 15
Colon, Glands of the..... 14
Coma, Malaria with..... 249
In Hypothetical Case..... 257
Coma, During Symptomatic Treatment..... 312
Common Continued Fever, Armstrong (1816)..... 16
Complications of Typhoid Fever.. 14
Air Passages..... 308
Bedsores..... ..257, 311
Brain Fever.....75, 142, 148
Catarrh.....92, 307
Bowel..... 256
Bronchial Catarrh...307, 308, 317
Cerebral..... 38
Chorea..... 308
Cough.....89, 308, 317
Delirium...213, 217, 241, 254, 257
Diarrhoea.....
....213, 254, 256, 257, 300, 304
Diphtheria, 72, 131, 148, 218, 300
Dyspnœa..... 311
Embolism of the Pulmonary Artery..... 309
Enfeebled Heart..... 307
Headache.....238, 256
Heart, Enfeebled..... 307
" Flagging..... 311
" Muscular Degeneration of 308
Hebetude..... 241
Hemorrhage..... 76
130, 140, 181, 198, 217, 235, 307
Hypostatic Congestion of the Lungs..... 307
Influenza, 72, 130, 151, 152, 210, 253
Insanity..... 254
Intussusception..... 154
Jaundice..... 308
Kidney..... ....234, 306
La Grippe.....
.....72, 130, 151, 152, 218, 253
Lung..... 307
Mania, Acute..... 254
Meningitis.....
Meteorism.....213, 217, 233, 256
Opisthotonos.....138, 317
Paralysis.....33, 68
Pelvic..... 130

Complications of Perforation.....
.....47, 131, 217, 256, 257, 307
Peritonitis..... .. 257
Phthisis Pulminaris, Acute.... 252
Pneumonia 72,
88, 131, 137, 151, 218, 307, 308
Pneumo Typhus.....253, 335
Pregnancy 334
Ptyalism..... 305
Pyæmia..... 252
Pyrexia..... 311
Renal.....235, 306
Retching..... 240
Spleen, 75, 88, 99, 217, 219, 234, 257
Swelling of the Legs, Toes and
Body 309
Rubiola.....300, 317
Thrombosis, Detaching of.... 309
Tympanitis.....233, 213, 217, 236
Urine. 234, 256
Venous Thrombosis..... 309
" " by Harley.. 13
" " by von Geitl 13
" " Cause of.... 14
" " A Grave130, 241
Concentrated, Solution of Methy
lene Blue,..... 245
Conclusions of the Clinical Society
of Great Britain, (1892)..... 26
Condition of Patient at Onset of
Disease, by Murchison... . 11
Cone, Dr. J. E.....107, 150
Congestive Fever Certified as
Cause of Death..... 135
Congestion of the Capillaries..... 236
Congress, the Duty of..... 273
Consultant's Duty 309
Contagious Diseases 283
Contagiousness of Typhoid Fever
by Bretanneau 290
by Budd..... 290
by Leuret 290
by Gendron 290
Control of Symptoms, A. M. A.
Journal on..... 30
Convalescence..... 12
Conveying Typhoid to Others..27, 285
Cook County Hospital, Death and
Post-Mortem at.....144, 151
Copenhagen, Death Rate in..... 278
Copland (1844), Bilio-gastric Fev-
er, Mild Typhoid Fever,
Mucus Fever, Pituitous
Fever..... 17
Coperas..... 284
Corrosive Poisons, as Microbicides 299
Corrosive Sublimate..... 120
as Cause of Death..... 219
as a Disinfectant..... 284
as a Microbicide..... 299
Cos, Island of, Water Supply of. . 280
Cost of Typhoid Fever, Dr. Osler's
Estimate..... 275
Dr. Moore's Estimate..... 275
in Chicago..... 276
in Great Britain..... 277
in Scotland..... 277
of Treating..... 167
Costiveness..... 305
Cough, Treatment of.....89, 308, 311
A Usual Complication..... 317
Cow's Milk, the Ideal Food..... 323
Laws of the Roman Syndic in
Regard to..... 288
Cows, Feeding of, on Beets..... 324
on Blue Grass..... 324
Craigie (1837), Gastric Fever. Gas-
tro-enteric Fever, Gastro-
Splenic Fever... 7
"Creameries and Infectious Dis-
eases"..... 286
Crematories, Garbage..... 272
for the Dead from Contagious
Diseases 290
Creosote..... ... 65
Displacement of, by Guaiacol 210
Crescent Shaped Bodies in Palus-
tral Blood..... 243
Cruveilhier (1835), Enterite-Folli-
culeuse..... 15
Cullen (1769), Enteritis Erysipela-

tosa, Typhus Mitior, Synochus pro parte..... 15
Cunningham, Dr. M. V., Diagnosis of..... 116
Report of Case 146
Report of Fatal Case.....151, 202
Curability of Typhoid Fever, Evidence of the.....33, 65, 101
Cases Illustrating the..... .....35, 53, 59, 63, 77
Declaration of,..... 67
Questioned, 30..... 30
Curative Treatment of Typhoid Fever advantages of..... 39
Curatoret Aquarum..... 281

Dalton, Dr. H. C., Report of Cases. 200
Dandridge, on Operation in Perforation..... 331
Dangerous Medicines, Withholding of..... 297
Dangerous symptoms, Treating.... 298
Darm Typhus, Autenreith (1822),. 15
Deafness, Hutchinson on..... 12
in Children..... 318
Death, from Typhoid Fever Can Always be Averted..... 133
Due to Corrosive Sublimate.. 219
No Death in Thirteen Years.. 203
Harley on..... 13
Death Rate, from Typhoid Fever, Former, Under Symptomatic Treatment..... 113
in Foreign Cities.. 278
in Boston..... 279
in Buffalo..... 90
in Chicago..... 276
Cincinnati 278, 279
District of Columbia..... 279
in German Hospital, Philadelphia..... 314
in London..... 278
in Philadelphia..... 279
in Pittsburg.....65, 278
in New Haven..... 74
in Michigan..... 278
Death in Scotland..... 277
in St. Louis..... 90
in United States.....65, 114
in Vienna..... 270
in Youngstown..... 73
Debility, Influence of..... 25
Definitions of Typhoid Fever, by Murchison..... 11
Hutchinson..... 12
by Harley..... 12
by von Geitl..... 13
Hippocrates..... 18
De Haen (1760), Miliary Fever.... 18
Delirium, Murchison on..... 11
Hutchinson on 12
Journal of the A. M. A. on.... 30
Minified by Abortive treatment 213
Rambling, After symptomatic treatment..... 217
as a Symptom..... 241
in Hypothetical Cases....256, 257
in Children 318
Denver Medical Times, Quotation from Dr. Law's Paper.... . 192
Department of Public Health of the United States..... 274
Detroit, Mich., Paper Read, at, September, 1895..... 222
Diagnosis, of Typhoid Fever, 227, 241
Harley on Difficulty of..... 13
Confusion in, Caused by False Nomenclature..... 20
For Treatment..... .....73, 155
Mistakes in..... .....74, 136, 137, 148, 241, 317
Value of Symptoms in..... 75
Tardy, Condemned..... 76
Danger of Mistaken, of Malarial Fever..... 77
Condemnation of Composite.. 99
Possible Error in..... 129
Early, of First Importance ... 131
Early and Correct, in Children..... 134
Report of Error of in, Journal of A. M. A..... .. 136

Diagnosis, Made by Exclusion, 138, 242
Correct..... 154
Criticism of, by Members of M. V. M. A..... 222
By Aid of the Microscope..... 249
Exact, in Children, Difficult.. 316
Dr. Gustavus Eliot on..... 99
Difficulty of Taking Temperature, Cause of Error..... 232
Confirmed by Several Physicians..... 167
Diazo Reaction as an Aid to.. 234
Diaphoretic, Treatment..... 292
Diarrhoea, Harley on..... 13
Hutchinson on..... 12
Murchison on..... 11
in Diagnosis..... 234
Ochre-Colored Stools..... 256
Copious, as a Symptom..... 257
An Indication for the Exhibition of Laxatives..... 300
Change in Character of...304, 310
in Children..... 321
Diazo Reaction, an Aid to Diagnosis..... 234
Test..... 235
Dickson, Dr. J. A., Report of Cases, ... 63, 163
Dilated pupils, Murchison on..... 11
Dicrotism, of the Pulse 309
in Children..... 318
Diet,..... 50
of Patients in the Buffalo Hospitals..... 82
of Patients after Abortive Treatment 83
No Restriction necessary in Aborted Cases of Typhoid, Fever.....96, 99, 130
Given at Proper Intervals.... 296
Proper..... 312
Directions for..... 323
Journal of A. M. A. on,..... 30
Differential Diagnosis.....137, 242
of Acute Mania..... 254
Differential Diagnosis of Atypical Typhoid..... 254
Bilious Attack. 254
Cerebro-spinal Meningitis.... 254
Epidemic Influenza..... 253
Gastroenteritis..... 316
Insanity 253
La Grippe,..... 253
Malarial Fever..... 242
Meningitis 242
Pneumonia..... 253
Pneumo-typhus..... 253
Puerperal Fever..... 252
Pyæmia 252
Scarlatina..... 252
Tuberculosis, Acute Phthisis Pulmonaris..... 252
Tuberculosis, Miliary..... 253
Tubercular Meningitis..... 253
Typhus Fever..... 249
by Murchison..... 250
Digestion 313
Digitalis 311
in Perforation..... .. 330
Diphtheria, Proper Treatment for 72, 148, 218, 300
Diuretic Mixture Given in Dr. Udell's Case..... 187
Formula for..... 306
Treatment 292
Disinfectants, Proprietary..... 284
Disinfecting Solution..... 284
Disinfection, of Every Emunctory. 283
Not as Necessary after Abortive Treatment..... 284
all Soiled Garments. 295, 319
District of Columbia, Report on Typhoid Fever in... 269
Death Rate in..... 279
Distilled Water, with each Dose of Medicine.....303 321
Displaced by Laxative Mineral 306
Dodge, Dr., Report of Cases..... 183
Fatal Case of..... ... ...185, 255

Doses, Minute, of Antiseptic Medicine...111, 302, 303, 305, 306, 302
Dothienentérite, Bretenneau, (1826), Christison (1840), Leuret (1823).....17, 18
Dover's Powder..... 311
Dresden, Death Rate in..... 278
Dublin, Typhoid Fever in..... 277
Death Rate in..... 278
Durance River, Water Supply.... 282
Duration of Typhoid Fever..... 103
Murchison on..... 11
Hutchinson on..... 12
Harley on..... 12
Sir William Jenner on..... 336
Dyes, Dr. George Thin on..... 245
Chezynsky's..... 245
Mannaberg's..... 247
Dyspnœa, Treatment of.....311

Ebel (1836), Typhus Gangliaris vel Entericus..... 15
Eberth, Discovery of Bacillus Typhosis.....83, 224
Bacillus, Found in the Urine.. 235
Bacillus Present in the System 292
Edinburg, Death Rate in..... 278
Editor of the Journal of the A. M. A., "On Treatment of Typhoid Fever"..... 64
Editorial in Journal of A. M. A... 29
Egg Albumen..... 324
Eggnog..... 312
White of..... 324
Egopheny..... 163
Ehrlich's, Diazo Reaction, in Diagnosis.....169, 234
Test..... 235
Eliot Gustavus, Dr., on Incorrect Diagnosis of Typhoid Fever 73
on Composite Diagnosis..... 99
on Correct Diagnosis, Case of Dr. F Mahommed..... 262
Emaciation..... 257
Embolism of the Pulmonary Artery..... 309
Embrocation of Guaiacol and Eucalyptol..... 322
of Spiritus Terebinthinæ..... 311
Emesis, Arrest of..... 280
Empedocles..... 280
Emulsion, Turpentine..... 163
Endemic Disease, of Murchison... 11
of Hutchinson..... 12
Endemic Fever, Many Writers.... 15
Enemata..... 312
Enlargement of the Spleen, Dr. Eliot on..... 99
Under Symptomatic Treatment..... 217
A Symptom of Typhoid Fever 234
Eosin, Solution of..... 245
Enteric Fever. Ritchie (1846), Wood (1848), W. F. Gairdner (1859), Coll. Phys., London, (1869)..... 15
Entérite-folliculeuse. Cruveilheir (1835), Forget (1841)..... 18
Enterite Septicémique. Piory (1841)..... 16
Enteritic Fever. (Mills 1813)..... 18
Enteritis Erysipelatosa. Cullen (1769)..... 17
Entero-Mesenteric Fever, Abercrombie, (1820)..... 18
Epidemic Gastric Fever, Cheyne (1833)..... 17
Epidemic Influenza, Differential Diagnosis of..... 253
Epidemics of Typhoid Fever..... 24
Bay Head, New Jersey..... 28
Belfast, Ireland..... 286
Buffalo..... 91
Fortune's Well, England..... 27
Ironwood, Michigan..... 43
Lake City, Iowa..... 197
Leeds, England..... 286
Lorain, Ohio..... 194
Montclair, New Jersey..... 287
New Melford, Connecticut.... 287
North Dakota..... 91
North Jackson, Ohio..... 38

Epidemics of Typhoid Fever,
Northern Michigan 91
Orphan Asylum, England 25
Plymouth, Connecticut..... 289
Renfrew, England... 275
St. Louis..... 91
Somerville, Massachusetts... 287
Springfield, Massachusetts.... 287
Stamford, Connecticut..... 287
Wampum, Pennsylvania 36
Waterbury, Connecticut..... 287
Watertown, New York..... 289
Winnifrede, West Virginia ... 289
Epigastrium..... 318
Sinapism Over 303
Epistaxis.....238, 252
in Children 318
Murchison on 11
Hutchinson on..... 12
Ergot in Hæmorrhage..... 332
Erysipelas 210
Eruption of Variola..... 253
"Eruptive and Continued Fevers,"
Death Rate in Dublin Hospitals 277
Escher on Operation in Perforation 331
Escherich First Described Bacillus Coli Communis..... 224
Eucalyptol. 65
and Guaiacol Applied to the Abdomen.....76, 322
as Used by Dr. Dodge..... 183
in Formula No. 1..... 302
in Formula No. 2..... 303
in Formula No. 3..... 305
in Formula No. 4..... 321
in Formula No. 5..... 321
Eucalyptus. Oleum 311
and Guaiacol, Applied to Abdomen..... 311
Eupalinus.... 279
Evacuations, Disinfection of..... 283
Number of..... 304
in Children 321
Evanson (1836), Infantile Remittent Fever..... 16
Exciting Cause of Typhoid Fever.
Invasion of the Noxa..... 25
Excrementa, Rendered Innocuous by Abortive Treatment..... 42
Disinfection of..... 284
Exercise not Restricted in Abortive Treatment of Typhoid Fever.....35, 95, 313, 217
Exhaustion, Harley on..... 13
Expectant Method of Treatment.. 258
Expectorants, Anodyne..... 308
Stimulating 309
Expectoration..... 163
Eyes, in Brain Lesions of Children 318
Ophthalmoscopical Examination of..... 252

Fæces, Microscopical Examination of..... 223
Fairchild Brother and Foster's Panopeptin 302
Fall Fever, Flint (1852)..... 15
Farr (1859), Typhia..... 15
Fatal Cases.....182, 183, 185, 255
in Consultation..... 151
Last, from Typhoid Fever.... 139
of Dr. Cunningham..... 154
of Dr. Dodge..... 255
of Boudet..... 236
Faust, Denunciation of..... 206
Febbre Biliosa, Bonelli (1775) ... 17
Febricula, Manningham (1746).... 16
Febril Condition of Harley..... 12
Febril Symptoms, Murchison on.. 11
Hutchinson on..... 12
G. Thin on..... 249
Febris Acuta Stomachica, Febris Intestinalis, Heister (1736).. 16
Febris a Putredine Orta, A. Tralliani (1785)..... ... 16
Febris Atacta, Pro Parte Selle, (1770)..... 16
Febris Biliosa, Galen (?), Riverius (1623), Stahl (1700), Juncker (1736)..... 17
Febris Biliosa Putrida, Celle (1770) 17

Febris Chronica (?), Juncker (1736) 17
Febris Colliquativa (?), Forestus (1668)..... 17
Febris Colliquativa Primaria Sue Essentialis; Burserius, (1785) 17
Febris Gastrica Ballonius, (1640).. 17
Febris Gastrica Acuta Burserius, (1785)..... 17
Febris Glutinosa Gastrica, Sarcone (1765)..... 17
Febris Hectica, Willis (1667)..... 17
Febris intestinalis Vel Mesenterica, Riedal, (1748)..... 17
Febris Lenta, Forestus (1591), Willis (1659). Linnaeus (1763), Vogel (1765)..... 16
Febris Mesaraica, Wendt (1822)... 18
Febris Mesenterica Acuta, Burchard, (1785), Burserius, (1785)..... 18
Febris Mesenterica Maligna. Baglivi (1696), Hoffman (1699)..... 17
Febris Mucosa. Selle (1770)..... 17
Febris non Pestilens, Forestus (1591)..... 15
Febris Petechizans vel spuria. Hoffmann (1699)..... 17
Febris Pituitosa. Stoll (1785). Strack (1789).....
Febris Pituitosa Mucosa, Jacobi, (1795)..... 17
Febris Putrida. Riverius (1623).. 16
Febris Putrida aut Nervosa. Wintringham (1732)..... 16
Febris Putrida aut Biliosa. Tissot (1788)..... 16
Febris Putrida quae vulgo lenta appellatur. Willis (1659)..... 16
Febris Semitertiana seu composita. Galen (?), Forestus (1591), Spigelius (1624)..... 16
Febris Stercoralis (?). Quesnay (1753)..... 17
Febris Tympanica. Babbington (1853)..... 18
Febris Verminosa. Selle (1770).. 18
Ferrum Sulphatum..... 284
Fever on the Spirits. Manningham (1740)..... 16
Fever, with Affection of the Abdomen. Alison (1827)..... 18
Fever, with Ulcerations of the Intestines. Bright (1829)..... 18
Fièvre Adèna-Meningée. Pinel (1798)..... 16
Fièvre Continue. Lerminier (1823) Andral (1823)..... 16
Fièvre Ataxique, proparte. Pinel (1789)..... 16
Fièvre Entero-Mesénterique. Petit (1813). Serres (1813)..... 18
Fièvre Gastrique, Dict. des Sc. Med. (1816)..... 17
Fièvre Meningo-gastrique, Pinel (1798)..... 17
Fièvre Muqueuse, French Writers. 17
Fièvre Nerveuse, French Writers. 16
Fièvre Typhoide, Louis (1829), Chomel (1829), Bouchard (1895)..... 15
Fischl..... 224
Fish, as an Article of Diet..... 324
Flagella in Palustral Blood..... 293
Flagging Heart, Treatment of..... 311
Flint (1852), Autumnal Fever, Fall Fever..... 15
on Antidote to Typhoid Poison. 225
on Arrest of Typhoid..... 226
on Bronchial Catarrh..... 317
Fomentations, hot..... 309
Food..... 217
Administration of.....296, 300
Solid..... 313
Liquid.....307, 312
Fordice (1791), Irregular Low Nervous Fever..... 16
Forestus (1591), Febris Colliquativa, Febris Lenta, Febris Non Pestilens, Febris Semitertiana seu Composita..15, 19

Forget (1841), Entérite-folliculeuse. 18
Formula, No. 1..... 302
No. 2..... 303
No. 3..... 305
Diuretic Mixture..... 306
No. 4..... 321
Chezynsky's for Dyes..... 245
Thin's.....247, 248
No. 5..... 321
Diazo Reaction..... 235
Fortune's Well, Epidemic at 27
Fraser, Dr., Report of Case..... 124
Free, Dr. S. M., Letter and Reports of Cases..... 190
Friedlander..... 224
Frontal Headache, in Diagnosis,.. 238
Gaffky..... 22
Gairdner, W. T., (1829) Enteric Fever..... 18
Galen (?) Febris Biliosa..... 17
Febris Semi Tertiana Seu Composita..... 16
Ganges, Fresh Water Canal..... 282
Gastric Derangement, Hutchinson. 12
Gastric Fever, Craigie (1837)...17, 261
Gastrisches Fieber, Richter (1813). 17
Gastro-bilious Fever, Modern Writers..... 17
Gastro-enteric Fever, Craigie(1837) 18
Gastro-entérite, Broussais (1816)... 18
Gastro-enteritis, Differential Diagnosis of..... 317
Gastro-intestinal Antisepsis..... 40
Gastro-intestinal Symptoms..... 316
in Relapse..... 325
Gastro-splenic Fever, Craigie (1837)..... 18
Gendron, Contagion Theory of... 290
Geographical Distribution of Typhoid Fever.....21, 103
Gerhart, Percentage of Relapses.. 328
German Hospital, of Philadelphia, Brand Method in..... .. 314
German Observers on Relapses... 328
Germicides, Nontoxic..... 219
Gibson, Dr. R. D..... 38
Gilchrist, (1734), Nervous Fever.... 16
Glasgow, Death Rate in..... 278
Goat's Milk..... 323
Golgi.....242, 249
Grass, Blue for Cows..... 324
Great Britain, Typhoid Fever in.. 277
Greeks, Health etc..... 279
Griesinger (1857) Ilio-Typhus,... 15
Guaiacol..... 65
Applied to Abdomen..... 76
and Eucalyptol Mixture..... 183
Replaced by Carbonate of.... 210
Absolute, External Application of.....311, 322
Benzoyl, in Lung Complications..... 308
Embrocation of..... 322
Carbonate of, Report of Dr. Law 192
in Formula No. 1..... 302
in Formula No. 2..... 303
in Formula No. 3..... 305
in Formulæ Nos., 4 and 5.... 321
Gurgling, Murchison on..... 11
as a Symptom of Typhoid Fever..... 256
in Diagnosis..... 233
Guy's Hospital..... 262
Hæmatoxylin for Staining Spores. 247
Hahn, Dr. H. H.....
Verification of Diagnosis 51
Hahn on Operation in Perforation. 331
Hamburg, Death Rate in..... 278
Hamilton, John B , A. M., M. D., Report of Marine Hospital Service 227
on Rose Spots..... 228
on Typhoid Fever in Rural Districts 275
Hare (1853), Sepimia..... 16
Harlem Viaduct..... 282
Harley, Definition of Typhoid Fever 12
Condemnation of Vegetable Cathartics 210

Hart, Ernest, Mr., "Reports on Waterborne Typhoid"..... 24
on Period of Incubation of Typhoid Fever..... 26
Duration of Power of Conveying Infection..... 27
Modes of Convection..... 27
on Prophylaxis..... 266
on Polluted Wells and Streams 270
on Contaminated Milk..... 285
Headache..... 256
Murchison on..... 11
Hutchinson..... 12
Louis on..... 238
in Diagnosis, Occipital..... 238
Frontal..... 238
Health Boards of Canada..... 41
of the United States.....
Duty of.....268, 272
Limited Jurisdiction of...282, 283
Health Reports as Evidence of Errors in Diagnosis..... 137
Health Report of Typhoid Fever in Chicago..... 276
in Dublin..... 8
in the German Hospital, Philadelphia..... 314
in Michigan..... 278
in Mid-Renfrewshire..... 276
in New Haven..... 74
in Pennsylvania Hospital, Philadelphia..... 315
in Philadelphia..... 275
in Pittsburg.....65, 278
in the Presbyterian Hospital, Philadelphia..... 315
in Scotland..... 277
in Great Britain..... 277
in Stamford, Connecticut..... 278
in the United States..... 65
in Youngstown, Ohio..... 73
Heart, in Diagnosis..... 240
Enfeebled..... 307
Flagging..... 311
Muscular Degeneration of... 308
Failure. Due to Coal Tar Derivitives..... 240
Hebetude, in Diagnosis.....241, 954
Hectic Fever, Harley on..... 13
Heister (1736) Febris Acuta Stomachica aut Intestinalis..... 17
Hematozoa, Malariæ, Action of Quinine on..... 219
Laveran's Discovery of..... 223
Valuable in Differential Diagnosis..... 242
Hemitritæus..... 15
Auctor. antiq. Var Galen (?).. 19
Hæmoptysis..... 309
Hæmorrhage..... 14
Harley on..... 13
Hutchinson on..... 12
Murchison on..... 11
Should be Unknown..... 66
in Case No. 51..... 151
From the Lungs..... 130
Common in Cases Not Scientifically treated..... 211
in Diagnosis..... 235
and Perforation..... 307
Accident to be Dreaded..... 312
in Case No. 105..... 140
Rare in Children..... 318
Danger of, Minimized..... 181
Does Not Contra-indicate Abortive Treatment..... 198
Danger of, Not Increased by Peristalsis..... 320
Ergot in..... 332
Ice in..... 332
Hepatization..... 163
History of Typhoid Fever..... 19
Hoffman (1699) Febris Petechizans vel Spuria, Febris Mesenterica Maligna..... 17
Holland, Sir Henry, on the Illness of the Prince Consort, of England..... 261
Holmes, Dr. O. W., on the Medical Profession..... 106

Hospitals, for Clinical Teaching... 221
Condition of Patients in Buffalo..... 82
Cook County.....144, 151
German, Philadelphia..... 314
Guy's, London..... 262
Death Rate in..... 314
Ironwood..... 45
Memphis..... 196
Pennsylvania, Philadelphia... 315
Presbyterian, Philadelphia.... 315
Saint Louis, Superintendent of 200
Scotland..... 277
Hot Springs, Paper, "Can Typhoid Fever be Aborted?" Read November, 1894, Denunciation at..... 222
Huff, Dr. Oliver N., Photograph Supplied by..... 334
Human Excrement.....26, 269
Poisonous Effluvia from, Predisposing Cause of Typhoid Fever..... 25
in Drinking Water..... 267
Hutchinson, Dr. James H., Definition of Typhoid Fever..... 12
on Diagnosis and Treatment.. 250
on Percentage of Relapses.... 328
Huxham, (1739) Slow Nervous Fever..... 16
Hydrargyrum Chloridum Corrosivum..... 284
Hydrochloric Acid..... 236
Hydrogen, Peroxide of..... 330
Hydrostatic Principle, Known to the Ancients..... 281
Hygiene.....
Hygienic Surroundings, Bad ..147, 186
Hyperæsthesia in Reported Case.. 147
Hyperplasia..... 316
Hypostatic Congestion..... 307
Hypothetical Case, Nursing and Treatment of..301, 306, 309, 313
in Children..... 323
Murchison's..... 11
Hysteric Fever, Manningham, (1746)..... 16
Ice, in Perforation.....329
in Bleeding Artery..... 332
Ileum, Necrosis of the glands of. 258
Tumefaction of the glands of. 14
Murchison on..... 12
Hutchinson on..... 12
Iliac fosæ, Tenderness in..... 75
in Diagnosis..... 233
in Hypothetical Case..... 256
Murchison on..... 11
Hutchinson on..... 12
in Children..... 316
Ilio-typhus, Griesinger (1857)..... 15
Immunity from typhoid fever acquired..... 23
children posess no special.... 24
Incubator..... 246
Incubation period of typhoid, 26, 27, 71
Incurability of typhoid fever, Journal of the A. M. A., on.... 30
Indigestion, differential diagnosis of..... 317
Infantile Hectic Fever, Various writers..... 17
Infantile Remittent Fever, Evanson (1836), Maunsell (1836), many writers..... 16
Infectious Diseases, Prophylaxis 283, 285
Infectious Fever, Hutchinson..... 12
Influenza, treatment of..... 72
Differential Diagnosis of..... 258
Insanity, Differential Diagnosis of 245
Insomnia..... 318
Intestinal Derangement, Harley on 12
Intestinal Fever, W. Budd (1856) 18
Intestinal Hæmorrhage..... 14
Harley on..... 13
Hutchinson on..... 12
Murchison on..... 11
Intestinal Peristalsis..... 320
Lesions, Date of Appearance of..... 237

Intestines, Microscopical Examination of 223
Intoxications krankheit, von Geitl. 13
Introduction..... 5
Intussusception, Case of..... 159
Anatomical Specimen..... 202
Colored Plate of. 159
Iodine..... 210
Ipecac..... 98
Ironwood, Mich., Epidemic of Typhoid Fever at..... 43
Irregular Low Nervous Fever, Fordice (1791) 16
Island of Cos, Water Supply of... 280
Island of Ortygia. Water Supply of 280
Jacobi (1743) Febris Pituitosa Nervosa..... 17
Jaundice..... 308
Jellies, of Meat, Iceland Moss and Apples..... 234
Jenner Sir William (1849) Typhoid Fever..... 15
on the Incurability of Typhoid Fever 236
on the Illness of the Prince Consort.....260, 261
Johns Hopkins' Hospital Reports, ...24, 104
Relapses..... 328
Juices, Lemon, Fruit, Meat..... 324
Juncker (1736), Febris Chronica, Febris Biliosa..... 16
Justice, Dr. R. C., Consultations with 122, 124
Report of Case..... 162
Endorsement of Abortive Treatment 163

Kanz, Schleinfeiber (1795)..... 17
Katzenback, Dr..... 28
Report of Epidemic at Bay Head, New Jersey..... 286
Kentucky Blue Grass, for Cows' Food..... 324
Kidneys, Journal of the A. M. A. on Treatment of the..... 30
Kidneys, Excretion of the..... 234
Protection of..... 206
Free Action of..... 35
Microscopical Examination of. 323
Kimura, on Operation in Perforation 331
Klebs..... 224
Klein..... 224
Koch, Discovered the Bacillus Typhosis.....83, 224
Koch—Eberth Bacillus..... 235
Knaus, (1786) Morbis Biliosis Mucosus 17
La grippe, Abortive Treatment for Typhoid Fever in..... 72
Typhoid Fever Mistaken for 151, 152
Antiseptic Treatment for..... 218
Differential Diagnosis of..... 253
Lake City, Iowa, Epidemic at.... 197
Lancet Clinic of Cincinnati, Report on Death Rates..... 277
Report of Ricketts on Typhoid Ulcer, etc.....
Langrish (1735) Lent Fever..... 16
Laryngeal Ulcer, Niemeyer on.... 317
Lassitude, Hutchinson on..... 12
Laveran, Exclusion of, hæmatozoa, of..... 169
Hæmatozoa, Sought for..... 223
" Discovery of..... 242
" Types of..... 243
" Diagnostic Value of 249
Law, Dr. G., Paper on Abortive Treatment of Typhoid..... 192
Laxative Effect Important in Abortive Treatment.....292, 300
Professor L. D. Woodbridge on..... 300
Leeds, England, Epidemic at..... 286
Liebermeister, Percentage of Relapses..... 328
Lemon Juice 324
Lent Fever, Strother (1729)..... 16
Lerminier (1823), Fiévre Continue. 16
Lesions, of Typhoid Fever..... 12

Lesions, Hutchinson on..... 12
Harley on..... 12
Anatomical..... 14
Date of Appearance of..... 237
Leucocytes, Pigmented..... 249
Globules in..... 243
Leuret (1823), Dothiénentérito, of. 18
Contagion Theory, of..... 290
Leeuwenhœck on Living Germs in Alvine Dejections..... 223
"Life of the Prince Consort," Quotations from..... 261
Ligation in Intestinal hæmorrhage 324
Linen, Disinfection of.....284, 296
Linnæus, (1763) Febris Lenta..... 16
Little Fever, Manningham, (1746). 16
Liverpool, Death Rate in..... 278
Loch Katrine, Water Supply from. 282
London, Death Rate in..... 278
London Fever Hospital..... 251
Relapses in..... 328
Lorain, Ohio, Epidemic in..... 194
Long Continued Case of Typhoid Fever, Report on..... 208
Louis (1829), Fièvre Typhoide.... 15
on Rose Spots.....19, 228
on Headache..... 238
on Pulse 240
on Operation in Perforation.. 331
Low Fever, Many Writers.....16, 260
Lucke, Report on Operation in Perforation..... 331
Lung, Microscopical Examination of..... 223
Complications..... 307
Invasion of..... 319
Lymphoid Cells..... 316

Magnesia 98
Liquid Citrite of..... 98
Sulphate..... 19
Mahomed, Death of Dr. Frederick 262
Mahoning County Medical Society, Taught Abortive Treatment in, in 1880..... 33
Paper on Typhoid Fever..... 105
Mahoning County Medical Society, Members of, Endorsed Report in State Society 107
Malarial Fever, Diagnosis of..... 249
Confusion of, with Typhoid Fever, Deprecated..... 73
Deaths from Typhoid Fever, Reported as..... 73
Typhoid Fever, Mistaken for. 73
Danger of Mistaking Typhoid Fever for..... 77
Typhoid Fever Charts Mistaken for Charts of..... 95
Dissimilarity of Thermic Lines of Typhoid Fever and Cases 158
No Death from..... 203
Early Studies of..... 224
Microscopic Diagnosis of..... 242
Differential Diagnosis of, by Dr. G. Thin..... 248
Malarial Parasites, Laveran and Other Discoverers on..... 243
Manchester, Water Supply of..... 282
Death Rate in..... 278
Mangetus, (1695) Tritæophya Typhodes 16
Mania, Differential Diagnosis of.. 254
Mannaberg, Verification of Laveran's Discovery by..... 242
Method of Staining Malarial Parasites..... 257
Manningham (1746), Febricula, Little Fever, Nervous Fever, Hysteric Fever, Fever on the Spirits, Vapors, etc..... 16
Manzini, Reports Lesions of Peyer's Glands in Seven Months' Fœtus..... 23
March, Dr. E. J., Report of Cases 106
Marchiafava, Verification of Laveran's Discovery..... 242
Martin, Quotation from "Life of the Prince Consort"..... 261
Marseilles, Water Supply in..... 282
Massage..... 309
Massillon, Ohio, Letter from..... 164

Maunsell (1836), Infantile Remittent Fever..... 16
McCandless, Dr. Guy, Health Reports of Pittsburg..... 278
on Deaths from Typhoid Fever 278
McCurdy, Dr. John.....38, 55
Endorsement of Abortive Treatment..... 160
Cases Seen by..... 38
McGarvey, Dr. J. F., Report of Cases 194
McLeod, Dr..... 44
Remarks of..... 45
McWilliams, Dr., Report of Cases. 145
Meat Juice..... 324
Medical News, on the Brand Method..... 314
Netschagaw on Operation and Perforation..... 331
Medical Record, Report on Operation in Perforation..... 330
Medicaments, Great Variety of.... 85
Mild and Gentle..... 133
Medicinal and Antipyretics, Condemnation of..... 299
Megara, Water Supply in..... 280
Memphis City Hospital..... 196
Menthol, in Formula No. 1..... 302
in Formula No 2... 303
in Formula No. 3..... 305
in Formula No. 4..... 321
in Formula No. 5..... 321
Mercurous Chloride, Mild, in Formula No. 1 302
in Formula No. 2..... 303
in Formula No. 4..... 321
Mesenteric Glands, Hutchinson on 12
von Geitl..... 13
Tumefied, Specimen of..... 202
Mercurials, Ill Effects of..... 305
Metabolism in Children..... 316
Methylene Blue, Solution of, in Chezynsky's Formula for Dyes..... 245
Meteorism..... 233
Meyer, B..... 224
Meyers, Dr. H K., Report of Cases..... 190
Microbic Diseases 148
Power of Antiseptic Medicine Over..... 157
Application of Antiseptic Medicine to, Case of 210, 218
Microbicide, Corrosive Sublimate as a..... 299
Microörganisms..... 269
Micrococcus Pneumoniæ Crouposæ..... 335
Microscope..... 306
in Alvine Dejections, (1673),.. 223
Examinations of Stools..... 234
Valuable Aid in Diagnosis.... 235
Examination of Blood for malarial Parasites..... 242
in Diagnosis of Malaria..... 245
in Diagnosis, by Dr. Thin.... 249
Examination of Sputa, of Urine, of Buccal Cavity, of Fæces 223
Necessary Outfit..... 244
Mikulicz, Operation on Perforation 331
Mild Typhoid Fever, Copland, (1844)..... 15
Miliary Fever, Pringle, (1760), De Haen, (1760) 18
Milan, Death Rate in 278
Miliary Tuberculosis, Differential Diagnosis of..... 253
Milk..... 26
Contaminated.....27, 86
Katzenbach's Report on..... 28
as a Nutriment..... 82
from Unhealthy Cows..... 266
Influence in Spreading Zymotic Diseases..... 285
Boiling of.....285, 286, 288
Peptonized..... 312
for the Babe..... 323
Alkaline 324
Mills, (1813), Enteritic Fever... 18
Mind..... 313
Mineral Water.....191, 306

Mississippi Valley Medical Society
Paper Read at, 1893.....29, 55
Discussion of Paper in....105, 200
Paper Read at, (1894), Hot Springs, Arkansas 112
Paper Read at, (1895), Detroit, Michigan 222
Mississippi Valley 41
Mitchell District Medical Society, Paper Written for, (1895), West Baden Mineral Springs 205
Moore, Dr. J. W., Quotation from "Eruptive and Continued Fevers"..... 277
Montclair, New Jersey, Epidemic at 287
Morbus Biliosis-Mucosus, Knaus, (1786)..... 17
Morphine..... 329
Morton on Operation in Perforation 331
Moscow, Death Rate in 278
Muco Enteritis, Various Writers.. 18
Mucous Fever, Copland, (1844)... 17
Munich, Death Rate in. 278
Munro, Dr., on Cost of Typhoid Fever..... 275
Murchison, Definition of Typhoid Fever..... 11
Nomenclature of Typhoid Fever..... 15
Pythogenic Fever..... 18
Report of Lesions in Seven Months' Fœtus..... 23
on Incubation of Typhoid Fever..... 26
on Typhoid Fever in Children 134, 316
Chart of Wunderlich..... 216
on Rose Spots.....227, 228
on Hæmorrhage..... 236
on Headache..... 238
on Pulse..... 240
on Contagion of Typhoid Fever 290
Murphy, Professor, Denies the Possibility of Aborting Typhoid Fever..... 108
Muscular Degeneration of the Heart 308

Naphtha..... 245
Nausea.....235, 240
Harley on..... 13
Necrosis 217
Nephritic Derangement 223
Nervenfieber, German Writers.... 16
Nervous Complications..... 335
Nervous Fever, Gilchrist (1734), Manningham (1746)..... 16
Nervous Sedative, Alcohol as a.... 300
Netschagaw, Report of Case of Operation in Perforation..... 331
Neven, Dr. J. K., Health Officer of Ironwood, Endorsement of Treatment 48
New Milford, Connecticut, Epidemic of Typhoid Fever at..... 287
New York Clinical Society, Katzenback's Report of Epidemic at Bay Head to 286
New Theory..... 48
New Sydenham Society 243
Niemeyer on Bronchial Catarrh... 317
Night Soil Fever, Brown (1855)... 18
Nitrate of Sodium. 235
of Strychnia. 330
Nitro-Glycerin 330
Nomenclature, from Murchison... 18
Nontoxic Germicides..... 219
Normal Temperature in Rectum.. 252
Noxæ..... 241
North Dakota, Epidemic in. 91
North Jackson, Ohio, Epidemic in. 38
Northern Michigan, Epidemic in.. 91
Nurses 35, 95, 130, 206
from Royal Infirmary, Dundee, Scotland 198
Directions to.....295, 296, 320
Importance of..... 297
Separate Bed for 319
Nursing, Journal of the A. M. A. on 30

Oatmeal, Infusion of..... 324
Ochre Yellow Stools, Hutchinson on..... 12

Ochre Yellow Stools, Harley on... 13
Occipital Headache..... 235
Oglesby, Dr. R. P., Report of Epidemic at Leeds, England 286
Ohio State Medical Society ...63, 105
Papers read at, 1894..... 91
Paper read at, Columbus, 1895. 149
Discussion in..... 107
Exhibition of Specimens in... 202
Oleum Eucalyptus. 311
Olive Oil..... 321
"On the Continued Fevers of Great Britain," Quotation from12.. 15
Onset of Fever, Condition of Patient at, by Murchison..... 11
by Hutchinson..... 12
by Harley..... 13
Operation in Perforation..... 330
Ophthalmoscopic Examination of the Eye..... 252
Opisthotonos in Children..... 318
Opium 98, 300, 311
Ortygia, Island of, Ancient Water Supply in..... 280
Orphan Asylum, England, Epidemic in..... 25
Osler, Reports on Age in Typhoid. 24
on Incurability of Typhoid Fever.....66, 104
on Mistakes in Diagnosis..... 74
on Rose Spots..... 229
on Typhoid Fever in Children. 134
on Temperature.....230, 231
on Differential Diagnosis..... 262
on Cost of Typhoid Fever.... 275
on the Brand Method..... 313
on Relapses..... 328
Oysters as an Exciting Cause of Typhoid Fever..... 26
Outbreaks of Typhoid Fever, Reports of Mr. Ernest Hart... 266
Caused by Polluted Wells 268
" Sewage Contaminated Rivers..... 267
Caused by Water Services from Manured Fields..... 270
Outbreaks of Typhoid Fever, Caused by Sewage of Villages. 270
" Pollution of Water-gathering Grounds..... 270
Caused by Careless Laying of Watermains..... 270
Caused by Contaminated Milk. 86

"Paludism," by Laveran,..... 243
Palustral Blood..... 243
Papular Rash..... 147
Paraffin..... 246
Paralysis..... 308
" Parasites of Malaria," by Marchiafava and Bignmi..... 243
in Palustral Blood..... 243
Paris, Water supply of..... 282
Death Rate, in..... 278
Parke Davis and Company..... 132
Paroxysms of Malaria..... 244
Pathological Changes in Typhoid Fever..... 14
Patient, Care of..... 296
Pennsylvania Hospital, Reports of Health..... 315
Pepper's "System of Medicine"... 134
on Temperature..... 230
on Diagnosis.....258, 263
Peptonized Milk..... 312
Pfieffer, on Pathogenosis of the
Pettenkofer, on Oscillations in Water in Wells..... 289
Bacillus Typhosis.....
Perforation..... .14, 217
Report of Death from..... 256
Cause of Death..... 257
Danger to be Avoided..... 307
Danger of..... 312
to Minimize the Danger of.... 181
Danger from Peristalsis..... 320
Treatment of..... 329
Ricketts on..... 320
Operations in..... 331
Period of Incubation..... 26
Peristalsis Intestinal..... 320
Peritonitis.....14, 257

Pernicious Malarial Fever, with Coma..... 249
Peroxide of hydrogen..... 330
Perspiration, Microscopical Examination of..... 223
Petit (1813), Fièvre entéro-mésenterique..... 18
Peyer's Glands..14, 217, 306, 313 329
Date of appearance of lesions 237
Lesions in infants..... 61
Cicatrizing Ulcers of, Evidence of Effect of Abortive Treatment.....152, 153, 154, 155, 159
Colored Plate of Cicatrizing Ulcers of, No. 1, facing page 152
Lesions of..... 14
Condition of, in Hypothetical cases 306, 313
Ulceration and Perforation of 329
Elevation of Temperature Accredited to Ulceration of... 158
Sloughs of, in Stools..... 234
Early Ulceration of.....236, 265
Reported Death from Perforation..... 256
Danger of Perforation of, in Mild Cases..... 257
Grave Lesions of, infrequent in Children..... 316
Cicatrizing Ulcers Exhibited 202
Diet in, Ulceration of 323
Case of Perforation of Ulcer of, Reported..... 183
Pharmaceutical Era, Dr. V. C. Vaughn, on Typhoid Fever in the United States..... 101
Philadelphia, Death Rate in..277, 279
German Hospital Reports.... 314
Phosphates, Triple in Stools..... 234
Phthisis Pulmonaris, Acute, Differential Diagnosis of..... 252
Picric Acid..... 247
Pigment Globules in Leucocytes.. 243
Pinel (1798), Fièvre ataxique pro parte, Fièvre adéna meningée..... 16
Piorry(1841) Entérite Septicémique 16
Pittsburg, Death Rate in..... 278
Cases of Typhoid Fever in... 271
Pittsburg Dispatch, Report of Health Returns..... 278
Pituitous Fever, Copland (1844).. 17
Plasmodia Malariæ, stain for..... 245
Plaster, Adhesive..... 311
Plymouth, Penn., Epidemic of Typhoid at..... 289
Pneumonia, Initial Treatment, Abortive.....72, 131
Differential Diagnosis of..137, 253
Reported Death from..... 151
Antiseptic Treatment of..... 218
Complicating Typhoid 307
Treated as Typhoid... 300
Treatment of..... 308
Dr. Dickson's Case of..... 163
Pneumo-typhus, Case of..... 115
Dr. Dodge's Case..... 183
Differential Diagnosis of..... 253
Treatment of..... 335
Podophyllum Resin, in Formula No. 1..... 302
in Formula No. 2..... 303
in Formula No. 4... 321
Poisonous Effluvia, as a Predisposing Cause of Typhoid Fever..... 25
Portugal, Death of King of..... 260
Post-Mortems..... 128
by Osler,..... .....75, 135
by Dr. Dodge..... 183
Revealing Cicatrizing Ulcers in Aborted Typhoid Fever.... 154
Potash, Chlorate of..... 305
Potass acetate..... 306
Poultice, in Perforation..... 320
Powell and Lealand's Eyepiece for Microscope 246
Prague, Death Rate in..... 278
Predisposing Causes of Typhoid Fever..... 22
Pregnancy, Complicating Typhoid Fever..... 331

Presbyterian Hospital, Health Reports of..... 315
Prescriptions, Formula No. 1..... 302
Formula No. 2..... 303
Formula No. 3..... 305
Formula No. 4..... 321
Formula No. 5..... 321
Diuretic..... 306
Prestwich, Professor, on Drainage from Graveyards..... 289
Previous attacks of Typhoid, Immunity given by..... 25
Priestly, Dr..... 289
Prince Consort, Report of Illness and Death of the..... 258
"Principles and Practice," Osler's Quotation from 234
Pringle (1750), Bilious Fever, Miliary Fever..... 17
Privies, Outside, Condemnation of 268
Prodromata of Typhoid Fever.... 187
Prognosis..... 264
Prophylaxis..... 266
Prostration of Patient During Typhoid, Murchison on..... 11
Hutchinson on..... 12
Pseudo-pneumonia, Differential Diagnosis of..... 308
Ptomaines..... 14
of Bacteria..... 292
Public Health, Department of 274, 283
Secretary of.....274, 283
Puerperal Fever, Differential Diagnosis of..... 252
Pulmonary Complications, Harley on..... 13
Pulmonary Artery..... 309
Pulmonary Phthisis, Journal of the American Medical Association on..... 29
Pulse, in Murchison's Definition of Typhoid Fever.....11, 240
in Hutchinson's..... 12
Louis on..... 240
Good During Antiseptic Treatment..... 213
Pulse, as an Aid to Early Diagnosis, 239
Period of Greatest Acceleration..... 255
Range in Hypothetical Case.. 256
Period of Greatest Weakness. 257
Dicrotic..... 309
Frequency in Children..... 313
in Relapse..... 325
Pupils, Dilated, Murchison on.... 11
Pus, in Perforation..... 330
Pyæmia, Differential Diagnosis of. 252
Pyogenic Surface..... 15
Condition of..... 154
Pyrexia..... 311
Harley on..... 13
Pythogenic Fever, Murchison (1858)..... 18

Quartan Ague.....244, 248
Quesnay (1753), Febris Stercoralis 17
Quinine.....89, 151, 164, 184
as Destructive of Hæmatozoa Malariæ..... 219
in Malarial Fever..... 225
as a Tonic.....299, 311
Quotidian Ague..... 244

Rales in Reported Case of Pneumonia..... 163
Recklinhauser..... 224
Record, Clinical..... 297
Rectum, Normal Temperature in.. 232
Reed, Dr. T. F., Report of Cases. 164
Cases Aborted..... 220
Registrar of Pittsburg, Reports of. 278
Relapses..... 325
Hutchinson on..... 12
Report of Cases of.....59, 78, 326
Murchison on..... 12
Percentage of, in the Child... 328
in the London fever Hospital. 328
in Johns Hopkins..... 328
of Hutchinson..... 328
of the German Observers, Leibermiester in Basle, Gerhart, Baumler and Biermer. 328

Relapses, Dr. Udell's relapse..... 188
Dr. Sherman on..... 191
Dr. Burt on..... 199
Remedies, antiseptic, condemnation of..... 39
in modified form..... 191
Remittent fever..... 248
T. Sutton (1806)..... 16
Renal Complications.....235, 306
Pathology of..... 262
Renfrew, England, epidemic in... 275
Reports of Cases of Typhoid Fever treated by Woodbridge Method in Youngstown....35, 49, 54, 76, 77, 88, 113, 138, 196, 208
in Ironwood, Michigan..... 44
in Trumbull County..... 96
in Sewickley, Penn..... 151
by Dr. Cunningham..... 151
by Dr. Reed..... 164
by Dr. Justice..... 162
by Dr. Dickson..... 164
by Dr. March..... 166
by Dr. Dodge..... 183
by Dr. Udell..... 185
by Dr. Chritzman..... 188
by Dr. Balmer..... 190
by Dr. Sherman..... 191
by Dr. Law..... 192
by Dr. McGarvey..... 194
by Dr. Yost..... 195
by Dr. Shields..... 195
by Dr. Burt..... 197
Report of deaths..... 182
by Murchison, Stoll and Boudet..... 236
my last..... 138
Report of Long Continued Case.... 208
unusually High Temperature.. 230
Respirations..... 240
Respiratory organs, Niemeyer on.. 317
Rest in typhoid, Journal of the A. M. A. on.....30, 31
Essential and when.....307, 312
in Inflammation..... 329
in Pregnancy..... 334
Retching..... 24
Reynolds' "System of Medicine," Quotation on Typhoid in Children..... 130
Rhagades..... 317
Rheumatism, High Temperature in..... 299
Rice, Infusion of..... 324
Richie (1846), Enteric Fever...18, 19
Ricketts, Dr. Merrill, on Typhoid Ulcer and Perforation..... 330
Richter (1813), Gastrisches Fieber..... 17
Riedel (1748) Febris Intestinalis vel Mesenterica..... 17
Rigors, Murchison on..... 11
Hutchinson on.....12, 252
Ring Cushion..... 311
Riverius (1623), Febris Putrida, Febris Biliosa..... 16
Rivers, Pollution of.....267, 282
Contaminated..... 270
Pure Water in..... 271
Roast Beef..... 324
Roman Syndic, Laws of..... 287
Rome, Ancient Water Supply of.. 280
Protection of Milk in..... 287
Death Rate in..... 278
Rose Shaped Bodies in Palustral Blood..... 243
Rose Spots.....61, 75, 88
Co-existence of Eruption of Scarlatina with..... 316
Pathognomonic of Typhoid Fever.....99, 251, 256
Osler on..... 229
Murchison on.....12, 228, 316
Surgeon General Hamilton on 227
Hutchinson on..... 12
Louis on..... 228
Harley on..... 13
in Children..... 319
in Relapses..... 325
as a Distinctive Feature of Typhoid Fever.....250, 252
Constancy of.....227, 228 229

Rose Spots, Diagnostic Value of.. 251
Rotterdam, Death Rate in..... 278
Routine Treatment of Typhoid, Journal of A. M. A. on.... 30
Rubeola.....300, 316
Rural Districts, Disposal of filth in 267
Typhoid the Bane of..... 275
Danger of Polluting Water of 284
Rutty, (1790) Bilious Fever..... 17

Saint Louis Hospital..... 200
Saint Petersburg, Death Rate in.. 278
Saline Cathartics, Condemnation of 210
Advised..... 306
Saline Infusion, in Vein in Perforation 330
Sandhurst 260
Sanitary Authorities..... 272
Sanitary Era, on Epidemics of Typhoid Fever..... 287
Sanitary Science, Importance of.. 283
Sarcone (1765) Febris Glutinosa Gastrica..... 17
Sauvages (1760) Typhus Nervosa, Typhus Hysterica Verminosus.....15, 18
Scarlatina 148, 218, 290, 300
Differential Diagnosis of..... 250
Complicating Typhoid..... 316
Schleimfieber, Kanz (1795)..... 17
Schonlein (1839) Typhus Gangliaris vel Entericus..... 15
Scotland, Typhoid Fever in..... 277
Secretary of Public Health..... 274
Sedative, Nervous, Alcohol as a... 300
Segmented Bodies in Palustral Blood 243
Seine, River..... 282
Selle (1770), Febris Atacta Pro Parte..... 16
Febris Biliosa Putrida 17
Febris Nervosa Febris Verminosa..... 18
Selinus, Water Supply of..... 280
Semmola, Quotation from..... 3
Senn, on Operation in Perforation 331
Sepimia, Hare (1853),..... 16
Sequelæ, of Typhoid Fever....14, 329
Dangerous..... 241
Serres (1813), Fièvre Entéro-mesénterique .. ..
Sero-therapy..... 259
Sewage as Cow's Food..... 266
Sewers.....25, 272
in Washington..... 269
in Vienna..... 272
Sherman, Dr. W. N., Report of cases..... 191
Shields, Dr. W. B., Report of Cases..... 195
Sick Room, Proper Condition of.. 295
Sinapism.....303, 318
Skin, Murchison on Condition of.. 11
Condition..... 256
Care of..... 296
Application of Guaiacol to.... 322
Sleep, Natural During Abortive Treatment..... 213
of Health..... 217
Frequent Dosage not Destructive of.....302, 304
Slow Fever, Strother (1729), Langrish (1735)..... 16
Slow Nervous Fever, Huxham (1739)..... 16
Smallpox, Less to be Dreaded than Typhoid Fever..... 101
Amenable to Antiseptic Treatment 218
Smith, Greig, on Operation in Perforation..... 331
Smith. Southwood (1830), Synochus and Typhus with Abdominal Affection..... 15
Sodium Nitrate..... 235
Soil, Natural Habitat of Typhoid Bacillus..... 267
Sokolof 224
Solid Food.35, 70, 95, 174, 189, 197, 313
Solitary Glands of Peyer, Harley on 12
Tumefaction of..... 14

Solutions, Disinfectant..... 284
of Eosin..... 245
of Methylene Blue..... 245
Chlorate of Potash, Saturated. 308
Somerville, Mass., Epidemic of Typhoid in..... 287
Sordes, a Symptom of Typhoid... ..... 240, 257
in Children..... 317
Specific Infection..... 178
Spherical Bodies in Palustral Blood..... 243
Spigelius, (1624) Febris Semi-tertiana Seu Composita..... 16
Spleen, Dullness Over.....75, 88
Murchison on 11
Hutchinson on..... 12
Enlargement of..... 99
Enlarged..... 217
Invasion of the, by Hæmatozoa Malariæ 219
Enlargement of, a Diagnostic Sign..... 234
Dullness in Typical Case.... 257
Tumefaction of..... 316
Spiritus Nitri Dulcis 306
Spiritus Terebinthinæ..... 311
Sponging.....71, 104, 296
Journal of the A. M. A. on... 31
in ordinary Cases..... 95
Directions to Nurses, in Regard to..... 311
in Children..... 322
Springfield, Mass., Epidemic of Typhoid at..... 287
Sputa, Microscopical Examination of..... 223
Stahl (1700) Febris Biliosa..... 17
Stamford, Conn., Epidemic at.... 278
Sternberg 224
Stewart (1840) Typhoid Fever.... 15
Stewart, Dr. H. T..... 117
Stimulants..... 308
Stockholm, Death Rate in..... 278
Stoll (1785) Febris Pituitosa..... 17
Stoll, on Hæmorrhage and Ulceration..... 236
Stomach, Journal of the A. M. A. on Treatment of, during Typhoid Fever..... 31
Free Action of..... 35
Stools, Alkaline..... 234
Condition of, Value as a Symptom..... 234
Microscopical Examination of 283
Disinfection of..... 283
Loss of Offensive Odor..... 310
Ochre Yellow, of Hutchinson..... 12, 234
Strack (1789) Febris Pituitosa.... 17
Strength Impaired by Typhoid Fever..... 313
Journal of the A. M. A. on... 30
Strother (1729) Slow Fever..... 16
Strychnine, in Flagging Heart.... 311
in Perforation..... 230
in Hæmorrhage 332
Stupor, Murchison on..... 11
Hutchinson on..... 12
Styrian Alps, water of..... 283
Sudamina..... 147
Sulphanilic Acid..... 249
Sulphate of Magnesia..... 191
Sulphites..... 210
Sunstroke, Differential Diagnosis of 249
Surgery, in Perforation..... 329
Sutherland, Mr., on Cost of Typhoid Fever in Great Britain..... 277
on Cost of Typhoid Fever in Scotland..... 277
on Death Rate in Scotland... 277
Sutton, Bland, on Operation in Perforation..... 331
Sutton, T. (1806), Remittent Fever. 16
Sweats, Murchison on..... 11
Hutchinson on 12
as a Symptom of Puerperal Fever..... 252
Symptomatology.....70, 227

Symptomatology, Rose spots, 61, 75, 88, 99, 227, 228, 229, 250, 251, 256, 276, 319..... 325
Temperature, 12, 30, 35, 70, 129, 148, 158, 198, 201, 211, 213, 214, 217, 229, 230, 231, 232, 246, 255, 256, 298, 299, 310, 319, 320, 322, 325.
Meteorism..... 233
Tympanites..... 11, 13, 65, 213, 217, 233, 256, 316
Abnormal Tenderness or Pain 11, 12, 232, 233, 256
Gurgling 11, 233, 256
Enlargement of Spleen..... .....99, 217, 234
Diarrhœa.....213, 234, 256, 257, 300, 304, 311, 321
Urine,..... ..234, 256, 283, 306
Renal Complications.....235, 306
Intestinal Hæmorrhage..... ...66, 76, 130, 140, 181, 198, 217, 235, 307, 312, 318, 320, 332
Headache.....238, 256, 318
Vertigo..... 238
Chilliness 11, 12
Epistaxis.....238, 318
Pulse 213, 239, 255, 256, 257, 309, 318, 325
Respirations..... 240
Heart.....240, 307, 308, 311
Vomiting...240, 256, 303, 318, 335
Nausea.....235, 240
Retching..... 240
Hebetude..... 241
Delirium..... .....213, 217, 241, 256, 257, 318
Peyer's Glands, Lesions of... .....14, 154, 155, 156, 158, 202, 217, 236, 237, 256, 257, 265, 306, 313, 323, 329
Sloughs from..... 234
Opisthotonos..... 318
Symptoms of Typhoid Fever, by Murchison 11
by Hutchinson 12
Symptoms of Typhoid Fever, by Harley..... 13
Control of..... 35
Synochus, Southwood Smith (1830) 15
Biliosus, Sauvages (1760)..... 17
Pro parte, Cullen (1796)..... 15
Synonyms of Typhoid Fever, by Murchison 15
Synopsis, of Cases...204, 207, 230, 325
"System of Medicine," by Reynolds..... 134
by Pepper 134

Tablets Formula No. 1..... 302
Formula No. 2 303
Formula No. 4, (for Children). 321
Directions for Administration of.....302, 303, 304, 305, 307, 310, 313, 320, 321
Wyeth's Bronchitis 89
Taches, Roses Lenticulaires of Louis..... 227
Taylor on Operation in Perforation 331
Teething, Differential Diagnosis of 137
Temperature.....35, 129, 210, 298, 299
Typical, Chart of Wunderlich 217
of Sick Room..... 319
not a Measure of Danger..... 70
Case with High, Treated as a Case of Indigestion 148
Ulceration of Peyer's Glands not a Cause of Elevation of. 158
High, in Cases Reported by Dr. Burt..... 198
Typical, in Cases Reported by Dr. Dalton 201
Report of Case of Unusually High 211
Lower During Abortive Treatment..... 213
in Diagnosis..... 229
in Rectum 232
Slight Elevation, a Symptom of Typhoid..... 255
Exacerbation of..... 256
in Children..... 322

Temperature, Journal of the A. M. A., on 30
Osler on.....230, 231
Hutchinson on 12
in Relapse..... 325
of Bath..... 320
of Disinfecting Solution..... 319
of Incubator..... 246
After Application of Guaiacol.. 322
in Children..... 133
Terebinthinæ Spiritus..... 311
Tertian Ague.....244, 248
Test, Diazo, of Ehrlich..... 235
Therapeutic Agents..... 299
The Hague, Death Rate in 278
Theory of Typhoid Fever..... 188
Thermometer, Clinical..... 229
Thin, Dr. George, Quotations from Article in London Lancet... 249
on Dye for Staining Parasites of Malaria..... 245
on Microscopical Examination of Palustral Blood..... 247
on the Microscope in Diagnosis 249
Thomas, Dr. J. J 51
Thoracic Region..... 311
Thrombosis, Venous, Treatment of 309
Thymol, in Formula No. 2..... 303
in Formula No. 3..... 305
in Formula No. 5..... 321
Tissot, (1758), Febris Putrida aut biliosa 16
Toast Water..... 324
Tongue, Parched 217
Murchison on 11
in Diagnosis..... 240
Condition of, as a Symptom... 256
Condition of. 257
in Infants..... 318
Towns, Sanitation in.....268, 272
Toxæmia in Hypothetical Case.... 312
Tox-albumen..... 292
Toxicologists 218
Toxins. 14, 292
Tralliani, A. (1785), Febris a Putridine Orta. Typhus Hysterico Verminosus..... 16
Treatment of Typhoid Fever, Modifying Effect of.... 184
Typhoid Amenable to..... 81
Unscientific 104
Action of Antiseptics in 110
Abortive.....114, 129, 201, 285
in all Stages of Typhoid..... 131
Antiseptic..... 132
Under Mistaken Diagnosis.... 136
Abortive, Endorsement of, *vide Abortive*.....
Salines in 211
in Hospital Wards with Other Diseases..... 298
Efficacious..... 307
of Typhoid in Children...316, 319
in Relapses..... 325
Complicated with Pregnancy.. 334
Trieste, Death Rate in..... 278
Tritæophyas, Auctor Antiq. Var.. 16
Tritæophya Typhodes, Mangetus (1695)..... 16
Tubercle of the Choroid..... 252
Tubercular Meningitis, Differential Diagnosis of..... 253
Tubercular, Differential Diagnosis of..... 252
Miliary..... 153
Microscopical Examination in 223
Tumefaction of the Glands..... 14
of the Spleen..... 316
Tumefied Mesenteric Gland..... 202
Turin, Death Rate in..... 278
Turpentine.....191 210
Emulsion of..... 163
Tympanites, Murchison on..... 11
Harley on 13
A Diagnostic Sign.....75, 233
Minified by Antiseptic Treatment 213
in Hypothetical Case..... 256
in Children..... 316
Typhia, Farr, (1859)..... 15

Typhoid Fever... 11
Stewart, (1840), Bartlett, (1842), Jenner (1849)..... 15
Typhoid Fever, Insidiousness of Attack..... 241
Typhoid State..... 250
Typhoid Ulcer..... 330
Typho Toxin..... 292
Isolated by Brieger..... 324
Typho-malarial Fever.....72, 99
Woodward (1863)..... 20
Condemnation of Application of Designation to Typhoid.. 66
Dr. Eliot, on..... 73
Typhus..... 15
Differential Diagnosis..... 249
Isolated..... 290
Spots of, contrasted with Rose Spots..... 250
Typhus Gangliaris, vel Entericus Ebel (1836), Schonlein (1839) 15
Typhus Mitior, Cullen (1769).....15

Udell Dr., Reports of Cases...124, 145
Communication from..... 185
Ulcer..... 236
Typhoid, Rickets on..... 330
Murchison on..... 226
United States, Health Departments of Cities in..... 41
Death Rate in..... ..101, 114
Benefit of Abortive Treatment to....., 200
Report to House of Representatives of..... 269
Need of Bureau of Public Health in..... 274
Demand for Secretary of Public Health in..... 274
Urine, Microscopical Examination of..... 223
in Diagnosis..... 234
Scanty..... 256
Disinfection of..... 283
Dilution of..... 306
Hypertoxic..... 234

Van Hook, on Operation in Perforation..... 330
Report of Case..... 331
Vapours, Manningham (1746)..... 16
Varieties of Typhoid Fever..... 319
Variola..... 72
Differential Diagnosis of..... 253
Vaughn, Dr. Victor C., Estimate of Loss to the United States, from Typhoid Fever..... 201
Vegetable Cathartics, use of, Condemned by Harley..... 210
Venice, Death Rate in..... 278
Venous Thrombosis, Treatment of, 309
Vertigo, in Diagnosis..... 238
Via Appia..... 280
Victoria, Queen, Diary of.....259, 260
Vienna, Death Rate in..... 278
Water Supply of..... 269
Virchow..... 203
Virus, Waterborne..... 25
Viscera, Abdominal..... 295
Vogel, (1764) Febris Lenta..... 16
Vomit, Disinfection of..... 283
Vomiting, in Diagnosis..... 240
in Hypothetical Case..... 256
Treatmeut of..... 303
in Children..... 318
Harley on..... 13
Von Gietl, Definition of Typhoid.. 13
Vyrnwy River, Water Supply from..... 282

Wales, Prince of, Illness of..... 261
Wampum, Penn., Epidemic of Typhoid at..... 36
Ware, Dr. John D..... 41, 42, 43
Washington, Infected Wells of.... 269
Water, Impure, Tolerance of. ... 23
Contaminated..... 24
Boiling of..... 25
Journal of A. M. A. on..... 31
Nonpotable, Effect of..... 86
as a Therapeutic Agent..... 104
as a Cause of Outbreaks of Typhoid Fever..... 266

Water as a Disinfectant..... 284
Pollution of.....288, 291
Warm Salt..... 330
Administration of..... 296
Large Draughts of..... ... 302
Cooling Effect of..... 299
Distilled.....235, 245, 247, 303
Mineral..... 191, 303, 306
Charged With Carbonic Acid Gas..... 303
for Children..... 321
Sterilized 303
Lime 323
Toast..... 324
Diuretic Mineral..... 303
Bed..... 311
"Water Borne Typhoid," by Mr. Ernest Hart, Report on.....24, 26, 266, 270
Water Borne Virus..... 25
Waterbury, Conn., Epidemic of Typhoid at..... 289
Watertown, New York, Epidemic of Typhoid at..... 289
Water Supply..... 27
In the District of Columbia, 269
in Vienna.....269, 282
in Magara..... 280
in the Island of Cos..... 280
in Athens..... 280
in Selinus, Sicily..... 280
in Syracuse, Sicily..... 280
on the Island of Ortygia..... 280
in Rome..... 280
in Marseilles..... 282
in Bengal, India.. 282
in Manchester..... 282
in Glasgow..... 282
in Liverpool. 282
in Paris. 282
Watson, Sir Thomas, Report of Case..... 261
Well Water... 27
Pollution of..... 268
Mr. Ernest Hart on..... 270
Well Water, Infected, Typhoid Propagated by..... 269
Pollution of Milk by 287
Oscillation of..... 289
Welphy, Dr., "Creameries and Infectious Diseases," Quotation from..... . 286
Wendt (1812), Febris Mesaraica... 18
West Baden Mineral Springs, Meeting of Mitchell District Medical Society at..... 205
West Branch Medical Society, Cases Reported at..... 190
Whiskey..... . 182
Whitesfield, Epidemic of Typhoid at..... 286
Whooping Cough Complicating Typhoid Fever... 140
Wickham, Dr., Diagnosis made by 36
Willis, (1659) Febris Lenta, Febris Putrida Quæ Vulgo Lenta Appellatur, Febris Hectica 16, 19
Wilson, on Treatment of Typhoid Fever..... 226
on Brand Method.....313, 314
Report of Cases 314
on Bronchial Catarrh 317
Winnifrede, West Virginia, Epidemic of Typhoid at..... 289
Wintringham, (1752) Febris Putrida Nervosa..... 16
Wood (1848), Enteric Fever..... 18
Woodbridge, Professor, L. D., on Laxatives..... 300
on Bronchial Catarrh..... 317
Woodbridge, Dr. Timothy Dwight 211, 230
on Malarial Fever 72
Woodward, Surgeon General, Typho-Malarial Fever..... 20
Worms, Typhoid Fever Erroneously Diagnosed as 137
Worm Fever Pro Parte, Various Writers..... 18

Wunderlich 232
Chart of..... 216
Reference to Chart.....229, 234
Wyeth's Bronchitis Tablets..... 89

Xylol..... 248

Youngstown..... 107
Health Reports of..... 73
Youngstown, Cases of Typhoid Fever Treated in, *vide reports*.....
Yost, Dr. J. O., Report of Cases.. .... 126, 294

Zincum Chloridum 284
Zymotic Affections, Treatment of . 219
Zymotic Diseases, Antiseptic Treatment of..... 221

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